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INTRODUCTION

by

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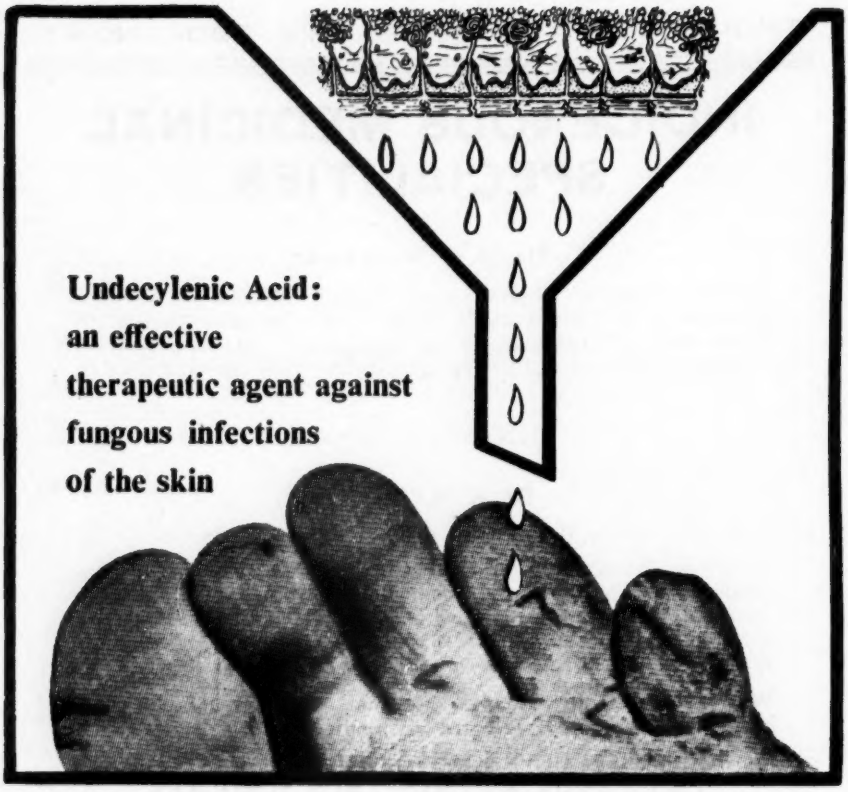

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Leprosy in Children

By
K. C. SAHU, M. B., B. S. (Pat), D. P. H. (Eng.), D. C. H. (Dub.),
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Assistant Professor of Skin and V. D., S. C. B. Medical College, Cuttack

The child is the heritage of the nation. The wastage of the life of child caused by leprosy is the wastage of the nation. The sadness of the little one should be the sadness of the nation. The acute physical or mental torture of the child is enormous. It is a great achievement for the worker, doctor, community and for the nation, to answer the cry of the child who, through no fault of own, has acquired leprosy. To save them from this blight and stigma and to pursue the warfare until not only leprosy as a disease is controlled but the horror and fear accompanying it is banished from mankind, is really a great thing.

Leprosy in children is not only a social problem but primarily a medical and preventive one. If the chance of infection could be removed from all children under ten years of age, chance of leprosy in all children could be removed totally and would die within two generations. Nearly 50% of the infected persons are children. It is calculated that about 15,000 children develop the disease annually.

Epidemio'ogy: In most cases leprosy is acquired early in childhood. The early age of onset in a majority of cases has been interpreted to mean greater susceptibility of children and as the onset of disease is in early age, a large number of children exposed to infection contract the disease.

That is leprosy is largly a child disease. Majority of persons acquire leprosy before the age of 20 and many are infected by the time they reach the age of 15 years and maximum appears between the age 5 and 15 years. So if the children are not exposed to infection leprosy would gradually die out of a community and this is the main cause of disappearance of leprosy in the United Kingdom. If the segregation of adult patients is made perfect it would not be possible for children to be infected and so the disease will not spread. I mean leprosy cannot be maintained in the absence of child infection.

Resistance: Children have less body resistance and are very susceptible to leprosy and they have far greater susceptibity as compared to the adults. Resistance to attack is distinct from the resistance to the progress of the disease. So children may be liable to infection but may not develop the serious type of disease. Children under 3 years of age acquire the infection more and develop a more resistant type of lesion than older children. Early lesion in children is of neural type. Early lepromatous cases can arise when there is breakdown of the resistance of the child. Most serious form of leprosy in childhood viz. the incipient lesions and lepromatous leprosy over 70 per cent of which have been traced to an open contact or open leprosy case is infective and from which the casual organisms of leprosy can be discovered from the skin or mucous membranes by standard methods of examination.

Contact: If healthy children of parents suffering from leprosy are separated at a very early age from all contacts there is no chance of acquiring the disease. Intra-familial contact, more specially room contact, is most important. Percentage of more serious type of leprosy cases i. e. incipient lesion and lepromatous leprosy of child-hood are traceable to intra-familial or house-hold contact specially room contact. But all children who come in contact with leprosy do not necessarily acquire the disease nor develop the more serious form of disease i. e. there is no reason to believe that leprosy is as infectious as is usually supposed, nor all lesions will progress. Social and hygienic conditions play an important role in the spread of leprosy. Bad housing, overcrowding or nonobservance of common rules of personal hygiene increase the chances of contact between infectious patient and children and thereby favour spread of disease.

Proximity of an infected village, poor economic conditions or pre-disposing diseases seem to play little or no part in the spread of leprosy and greatest factor in the introduction and maintenance of leprosy is contact with open cases.

Diet: Diet is a secondary factor and though some workers in leprosy are of opinion that there is no relationship between diet and progress of the disease or acquirement of more serious form of leprosy in children there is no significant improvement in children with additional diet factor over those having no such additions to their diet. Bad diet and undernutrition have always been considered to lower the general resistance and make the exposed children susceptible to infectious diseases like leprosy. A poor diet is never advocated in any chronic disease and it is always advisable to give a well balanced diet.

Sex: In child-hood there is no significant disparity between sexes. With increase in massiveness of contact the more serious lesions increased. Elderly male child is not confined as the female ones. He comes in contact with open cases in village or street and hence may develop leprosy which tends to progress and persist into adult life.

Juvenile Leprosy or Pre-lepromatous Macule or Incipient lesions of child-hood or borderline cases or indeterminate: It may be called pre-cutaneous or pre-lepromatous as it is the pre-cursor of lepromatous leprosy having many of its features. There is history of contact with open case. Small hypo-pigmented patches with distribution of lepromatous leprosy are present. They are slightly shiny with some erythema fading into surrounding normal skin. Tactile, thermal or pinprick sensations are present. There is no nerve thickening and there is no anaesthesia on extremities. Histologically the incipient lesion cannot be diagnosed. In my experience such lesions are seen better in an oblique sun light.

Heredity: Leprosy is not hereditary, whereas syphilis may be so. Leprosy has got no action on the child in utero. After birth a child born of syphilitic parents may show signs of syphilis but a child born of leprosy patients does not show any sign of leprosy. If the parents suffer from non-infectious leprosy, the child can live with them without developing the disease. If the parents are infective but if the child is separated from them soon after birth and brought up in healthy surroundings it will remain free from leprosy. Where arrangements for separation do not exist the best thing is to stop child-birth among infectious patients by sterilisation.

Social Medicine and Child Leprosy: In old time leprosy was looked down upon very badly. In India they are considered as cursed class. To-day it is said by many that the disease is either a punishment for sins of past or present birth or a form of syphilis and a family with a history of leprosy is looked upon with suspicion. There is an inborn fear and prejudice against this disease. This fear has passed through the traditional believes passing down through ages. Common public shun these leprosy patients.

In England a person with leprosy was declared dead to the world and at times the funeral service was conducted over the infected patient. In Africa some barbarous tribes burried the alive patients. But in these modern days leprosy should be looked upon as an ordinary medical disease. But invariably even these days parents object the examination of their affected children; rather they hide them as the public has hatred for them. Thus a vicious circle sets in.

In endemic area fearlessness for disease arises. Lack of fear leads to free and unrestricted and greater contact. Increased contact leads to spread of infection which subsequently leads to lack of fear. In non-endemic area people have no idea of such disease and hence no fear for the disease. The so called literate mass say that this disease is limited to un-educated and low status of society. But all should know that this disease does not spare any class, status, religion, community and nation but is acquired by infection and close contact.

After century's fruitless efforts though specific medicine like Sulphone group has been found out, the treatment of leprosy in children is unsatisfactory from

health point of view. Isolation is absolutely necessary as it takes many years to render lepromatous cases non-infectious. Isolation at home to prevent the spread of infections is not effective as the child does not think seriously about his mixing with his parents suffering from such skin disease which does not render patients bed-ridden. He does not realise why exceptional measures for isolation and secrecy need be employed. If frequent advices to children born to leprosy patients are given, and if widespread conversations are discussed in the family and out-spoken comments of normal children in the patients' hearing are made, it creates a negative self-feeling which might lead to emotional upsets, depression and to distressing situations.

Prognosis: About 7-8 per cent of simple macular group of neural leprosy in children are developed into lepromatous cases. So this type of leprosy is unlikely to pass into the lepromatous stage but if the lesions are extensive, showing thereby poor tissue immunity, the chances of children passing into the lepromatous stage are great. That is, the prognosis in children has to be more guarded than in adults as the simple non-lepromatous lesions in children are more likely to develop later into severe lepromatous type than similar lesions in adults.

In lepromatous leprosy the younger the person, the more serious is the prognosis.

In neural tuberculoid leprosy of minor degree in children a close watch should be kept and on the whole the prognosis appears to be quite good.

The prognosis in neural anaesthetic leprosy in children-the more indefinite and numerous, the greater the likelihood of child becoming lepromatous in later life. About one-third of the incipient or prelepromatous cases become lepromatous. When nerve tissue is grossly involved the likelihood of gross and disabling deformity is great and almost certain in growing child. The earlier the patient comes under treatment the more favourable is the prognosis as specific treatment with sulphone drugs and special measures to prevent deformities change the prognosis to a very favourable one. Lepromin test is of definite prognostic value as positive result indicates good prognosis.

Treatment: Treatment is almost the same as for adults. Children under 7 years of age can hardly stand intradermal and subcutaneous injections. Pure Hydnocarpus oil by mouth is worth trying although no claims are made for this method of administration. Children of nine years and above should be encouraged to take injections.

There is a great tendency for natural arrest of neural lesions and intensive treatment should be given to cases with multiple lesions. The tuberculoid lesions respond quite readily to intradermal injections.

In severe infection of nerves in children the great tendency to deformity must be borne in mind. Sulphone drugs and Thiosemicarbazone and Isonicotinic acid hydrazide are very useful drugs and should be given.

***Prevention of Leprosy*:** If leprosy in children is brought under control then maintenance of leprosy by adults is not possible. Leprosy cannot be controlled in a community by establishing treatment centres. Out-patient clinics treating a few cases contribute little or nothing towards the control of leprosy. There are two most effective methods of leprosy control : segregation and treatment of infective or open cases and prevention of child leprosy. ***Selective segregation*:** Isolation of infective cases from contact with healthy members of the community either by compulsory or by voluntary measures. Compulsory measures are financially impracticable and hence voluntary measures are to be taken. Institutions for segregation of infective cases act as centres of training and propaganda and by protecting the children from contracting the disease have a great value on anti-leprosy campaign but it should be linked up with schemes of prevention.

Examination of school children should be done by the School Medical Officer who should undertake the examination of children at a time when routine physical examination is being conducted rather than to arrange a special examination as the parents will not send their children whom they know to be suffering from leprosy. When found out the name and address of all children should be taken and arrangements to visit the homes of the affected children by trained assistants be made. Home visits by field and lady health visitors are suited for this purpose. They persuade contacts and their parents to send their children to leprosy clinic for periodic examination and when case is confirmed for regular treatment there. They give instructions to take precautions by patients and their relatives to prevent spread of infection.

Moreover persons with leprosy should be discouraged or prevented from producing children. Two alternative methods-not allowing married life or allowing it after sterilisation of the male partner by vasectomy.

Social work (In continuation of prevention of Leprosy): ***B. C. G. vaccination as a preventive measure*:**

Many workers have shown that vaccination with B. C. G. can change a negative lepromin (Mitsuda) reaction into a positive one. A naturally occuring positive lepromin in healthy persons is considered to represent an absolute resistance or comparative resistance to infection. A positive lepromin reaction in persons suffering from leprosy is always associated with benign form of disease and therefore indicates comparative resistance to infection. That is, when a healthy person with positive lepromin reaction is exposed to leprous infection, the person either will not acquire the disease or acquires it in a benign form.

Use of B. C. G, vaccination as a prophylaxis against leprosy is based on the assumption that a B. C. G. induced positive lepromin reaction has the same significance as a naturally occuring positive reaction.

However the role of B. C. G. vaccination in prophylaxis of leprosy is not fully established and when fully demonstrated, a big progress in preventive medicine for solution of leprosy control would be established.

Social work: Social workers should deal with social, emotional and financial problems connected with and arising from leprosy in children. Irrational attitudes of parents should be tackled by them and the new situations created in families by discovery of leprosy among their children should be solved and rehabilitation of children, discharged from leprosy homes, should be done by them.

Children whose parent or parents have leprosy should be brought up not in an artificial atmoshphere but in their own environment. Institutional life might make them feel that they are divorced from community life and might produce psychological problems and might make them institutional minded. Attempts should be made to find healthy relatives to take charge of them.

But if parents suffer from infective leprosy or more than one member in the family suffer from the same they should be separated from them and put in institutions at birth or at a very early age. In my opinion it is much better to move the source of infection to an isolated centre or at least for home-isolation, if the source is one. Open cases, if they sleep in the segregation area at night, will prevent the children from night contact. Many children acquire leprosy from relatives other than parents and hence they should be taken into consideration.

In institutions there should be training for career of healthy children of infectious cases under observation and for the education and vocational training which will be narrated below, in order that when they grow up they can naturally be absorbed into society with some occupation of their own enabling them to earn an economic wage.

Infective or potentially infective children: In village and the circumstances prevailing where it is impossible to segregate the children with infective or potentially infective leprosy or those who are very likely to develop gross nerve damage, they should be sent to children's institution which may be a part of the main sanatorium or preferably a separate children's sanatorium, as mixing of children with adults is undesirable in such places. The moral, social and mental outlook of adult leprosy patients is not conducive to character formation of young persons and hence separate homes for children should be established and educational and vocational facilities are provided in addition to treatment with sulphone and orthopaedic care. Children with benign lesions are very likely to retrogress and it is better to permit him to carry on under normal circumstances.

Children with lepromatous leprosy pass into adult life with lepromatous leprosy. The child, if in infective condition upto 16 years, should be transferred to adult institution. After care colonies should be created and opened up for

employing young people who had been brought up in homes for healthy children or who had been discharged from children's leprosy sanatorium.

When such helpless and deformed people are discharged from institution they go to streets, find out their existence by begging and visiting different leprosy asylums or homes for admission when they are suffering from trophic ulcers and though they are non-infectious they are not admitted by doctors of general hospital and when they return to their native village or home they are not wanted as they have scars and deformities and they cannot find out any occuption to live upon.

Arrested cases should be employed according to their ability as health visitors, clerks, injectors, peons, chowkidars, sweepers, nurses etc. or for other nation building activities e. g. construction of village roads, houses, tanks, canals etc. They can be engaged in agricultural work, poultry farms, dairy farms, brick making, cottage industries etc.

On the other hand Government may acquire suitable lands for agriculture with facilities for water supply adjacent to the existing Institutions or Homes for crippled patients. This land may gradually develop into farm colony for patients not wanted by society and institution. Dairy, poultry and cottage industries may develop in the above farm which may become self-supporting.

Children are our treasure and they should be treated and protected from infection at any cost.

In this connection let us remember the words of Mahatma Gandhi, "Leprosy work is not merely medical relief. It is transforming the frustration in life into joy of dedication, personal ambition into selfless service. If you can transfer the life of a patient or change his values of life, you can change the village and the country."

Epidermophytosis Interdigitalorum

By

G. D. CLARKE, M. R. C. S., Hyderabad, Dn.

Athlete's foot is a highly contagious fungus infection and is met with in many forms. A lady once complained that she had a blister on her foot that would not heal. On examination it was found that she had it not on one foot only but on both feet, between the 4th and 5th toes.

The skin was white and sodden and had pealed off in parts leaving raw patches. There was a great deal of irritation which induced scratching, which again made the condition worse. The soles were free. This was plainly Athlete's foot, or interdigital eczema. There are so many names, all meaning the same thing.

Ringworm, for instance, does not necessarily occur on the scalp only as is commonly believed. Like Phytosis it can attack any part of the skin.

Epidermophytosis starts usually as a small irritable patch. The skin is unbroken and appears slightly drier, and, but for the itching, is trivial. The infection soon spreads and starts to thrive in the flexures; wherever it is warm and moist–the groins, under the breasts in women or as in the case noted above in the feet. Fungi thrive in moisture.

It is sometimes difficult to account for the source of infection, but when it is remembered that the complaint is highly contagious it is not hard to see that it may be picked up anywhere. The dhobie is sometimes blamed, but that is another thing again. The swimming pool is a common mode of spread.

Athlete's foot is very infectious and spreads from one foot to another via wet floors or sodden bath mats where people use the same dressing rooms or bath rooms as in schools. Most swimming pools recommend that bathers should wash their feet particularly before entering the baths. This precaution protects who haven't got the infection.

If one suffering from Athlete's foot goes padding around the damp floors of bath–room anyone following in his footsteps will pick up the germs. On coming out of a bath or a swim one dries one's feet with a towel and then uses it for drying the rest of the body, thus spreading the infection.

A person suffering from epidermophytosis would do well not to rely on the laundry to disinfect his clothing but to boil them himself, especially such things as socks and underpants. Shoes too have been known to harbour infection. They could be dusted with cibazol and acriflavine powder.

Athlete's foot is an easy condition to treat. A lotion or disinfectant should be dabbed on twice a day and the parts dusted with talcum and cibazol before dressing to go out. It isn't wise to go swimming while even a trace of the disease is present or you will be making a free mean present to the others there.

There is always a possibility of getting reinfected after cure. A good preventive is plenty of talcum.

The Treatment of Fungus Diseases With Antibiotics

By

FREDERICK REISS, New York, N. Y.

Despite the constant search for antibiotic agents against pathogenic fungi, the number of effective drugs is still rather limited and not quite satisfactory. The antagonistic effect to fungi of most antibiotics is, by far, not as striking as that to other microorganisms.

It would border on undue optimism to state that sufficient progress had been made in the therapy of superficial fungus infections, or that antibiotic therapy is not a necessity. It appears, nevertheless, far more important and desirable that our attention be directed toward treatment of the systemic mycoses, which not only cause serious impairment of health but are, in many instances, fatal. Lack of a adequate therapy in this group warrants that serious consideration be given to the applicability of effective antibiotics.

LABORATORY INVESTIGATIONS OF ANTIBIOTICS AGAINST FUNGI

One of the earliest observations is that of Weidman, who demonstrated the antagonism between *Bacillus subtilis* and the growth of *T. gypseum.* This observation was later utilized by Chambers and Weidman in the treatment of dermatophytosis by applying live cultures of *B. subtilis* to toes affected with fungi. In the therapy of mycoses, a revival of interest for antibiotics was exemplified in an interesting study by Stokes, Peck, and Woodward. These workers investigated the *in vitro* effect of tyrothricin and pyocyanine against *Achorion schoenleini, M. gypseum, Trichophyton gypseum,* and *Candida albicans.* Search for the isolation of antibiotic substances from *Bacillus subtilis* was further pursued, using a variety of mediums containing either organic or inorganic substances. Most of these drugs had a striking *in vitro* effect on fungi. Thus, Lewis, Hopper, and Schultz found an inhibitory substance against several dermatophytes as well as against *Sporotrichnm schenkii* in a Seitz-filtrate of *B. subtilis* culture. On the other hand, Benedict and Langlykke crystallized six different substances from *B. subtilis* cultures, none of which had any effect on pathogenic fungi.

Johnson, Anker, and Meleney isolated and described another antibiotic from *B. subtilis,* which was found to be active *in vitro* against certain actinomycetes.

Similarly, Landy, Rosenbaum, and Warren produced an antibiotic from *B. subtilis* with negligible antibacterial but with antifungal properties. This substance was named bacillomycin by Landy, Warren, Rosenbaum, and Colio. *T. gypseum, E. floccosum, M. audouini, M. gypseum, T. rubrum,* and *T. schoenleini* were inhibited in a dilution of 1:75,000.

In addition to the dermatophytes, *Blastomyces dermatiditis* (yeast phase) was especially sensitive to this antibiotic, being completely inhibited by a concen-

tration of 0.075 mg. per ml. The mycelial form, however, required a concentration of 0.01 mg./ml. to suppress growth. Complete growth suppression of *Candida albicans*, *Cryptococcus neoformans*, and *Sporotrichum schenkii* was obtained with a 0.05 mg./ml. *Coccidioides immitis*, *Histoplasma capsulatum*, *Microsporium apiospermium*, and *Blastomyces brasiliensis* are slightly more sensitive, only 0.025 mg./ml. being required for complete inhibition.

Salle and Jann produced a purified product from *B. subtilis* called subtilin, which inhibited growth of the following organisms: *Actinomyces* (unidentified strain), *C. albican*, *C. neoformans*, *S. schenkii*, *Trichophyton gypseum*. Johnson and Burdonio studied eumycin, a purified product also obtained from *B. subtilis*, which was found to exert an inhibitory effect upon *T. mentagrophyts*, *M. gypseum*, *E. floccosum*, and *Nocardia*. Its effect on *Sporotrichum* and *Hormodendron* is less pronounced, however, and it fails to inhibit *Monilia* and *Cryptococcus*.

Encouraged by results obtained by several investigators, Moore and Wooldridge made a search for the pure form of an antifungal agent from *B. subtilis*. Various filtrates were developed that exerted an inhibition of varying degree upon the more common dermatophytes as well as on fungi causing systemic diseases. Hicky and Hidy isolated an antifungal agent, fradicin, in neomycin fermentation liquors, which is produced by *Streptomyces fradiae*. Antifungal activity is strong at pH 7 or higher but, at a lower pH, this activity is greatly reduced. Effective inhibition range was achieved with 2–10 mg./ml. in the following species: *C. albicans*, *C. neoformans*, *M. canis*, *T. mentagrophytes*, *M. gypseum*, and *H. capsulatum*.

A remarkable fungistatic and fungicidal effect against *Coccidioides immitis* was shown by prodigiosin, an antibiotic isolated from the red pigment forming *Bacterium serratia marcescens*. Lack has produced evidence that the hydrocylorate or perchlorate salt, or the prodigiosin base inhibited *C. immitis* in a dilution of 1:500,000. It was fungicidal in a dilution of 1,100,000 after 48 hour exposure.

Streptothricin and streptomycin also attracted some interest as antifungal agents. According to Robinson, Smith, and Graessle, both exert some fungistasis upon the common dermatophytes. Clavacin, which was originally believed to show some fungicidal action to a rather limited extent (Waksman, Horning, and Spencer), was reinvestigated by Herrick, who found that concentrations low as 0.02 per cent and, in some cases, even 0.01 per cent, completely inhibited the growth of *T. gypseum*. Tolmach and Lowenthal found that the crystalline clavacin had a marked antifungal power also against *T. pureum* and *M. audouini*. Gliotoxin was studied by Johnson *et al.* and Herrick. The former investigated gliotoxin in relation to its fungicidal effect on *Blastomyces dermatitidis*, and the latter for its effect on *T. gypseum*. Dilutions of 1:2000 and

1:8000 of gliotoxin were fungicidal to *Blastomyces dermatitidis*, and concentration as low as 0.001 per cent gliotoxin completely prevented the growth of *T. gypseum*.

One of the outstanding studies with penicillin is that of Keeney, Ajello, and Langford. While penicillin, in a concentration of 0.01 unit per cc. of culture not only inhibits but kills *Actinomyces bovis*. 10 units/cc. had no inhibitory effect upon the following organisms, tested: *T. mentagrophytes, T. rubrum, E floccosum, M. audouini, M. felineum, C. albicans, Bl.dermatitidis, S. schenkii, C. neoformans, C. immitis, P. pedrosoi*, and *H. capsulatum*. Moreover, penicillin stimulated the growth of these fungi.

Campbell, Saslow and Strong found marked inhibition against *B. dermatitidis, H. capsulatum*, and *C. immitis* produced by polymyxin B., aureomycin, chloromycetin and neomycin. Hammer, Pearson, Corrigan and Hayden came to similar conclusions, finding that aureomycin inhibited the growth of *T. rubrum* and *T. violaceum*.

Bacitracin exerted inhibition on *C. immitis*, while chloromycetin showed inhibition on *Actinomyces asteroides, Blastomyces dermatitidis, Epidermophyton floccosum, H. capsulatum, M. gypseum, S. schenkii, T. rubrum* and *T. schoenleini*.

Fumagillin inhibited, in a concentration of 10 mg./ml., *B. brasiliensis* and *C. albicans*.

Neomycin, in a concentration of 2.5 mg./ml., inhibited the growth of *A. asteroides, C. neoformans, E. floccosum, H. compactum* and *H. pedrosoi*.

Terramycin, in 1.25/ml. concentration, inhibited *C. immitis, E. floccosum, H. pedrosoi, M. gypseum, T. rubrum*, and *T. violaceum*. Rather promising was the isolation by Whiffen, of actidione which is a chloroform and water soluble antibiotic produced by streptomycin, yielding cultures of *Streptomyces griseus*. It is highly active against a large number of yeasts, including the therapy, resistant *C. neoformans*. Another antibiotic from an undetermined *Streptomyces* was isolated by Hazen and Brown and was named fungicidin. This antibiotic is fungistatic for a large number of dermatophytes, as well as *C. neoformans* and *H. capsulatum*. Inhibition was obtained in a concentration of 1.56–6.25 mg./ml. Definite evidence was offered that mice infected with *C. neoformans* and *H. capsulatum* respectively, showed a milder form of infection compared with the control. Life was also controlled beyond that of the controls. Variations of sensitivity to penicillin of actinomycetes was investigated by Drake, who found an appreciable variation of several strains both of *Nocardia asteroides* and *N. gypsoides*.

The multiplicity of morphological and physiological types of aerobic Actinomycetes *(Nocardia)* attracted the attention of Runyon, who compared the

in vitro inhibition test of penicillin, aureomycin, streptomycin and chloromycetin with *in vivo* testing. Three strains of *N. asteroides* were tested and showed an " impressive similarity " in sensitivity to these drugs. None of these antibiotics, however, had any effect, whatsoever, on experimental nocardiosis of mice. In contrast to the above findings, Strauss, Kligman and Pillsbury tested three strains of *Actinomyces bovis* and found a marked variation in their susceptibility to penicillin, streptomycin, neomycin, terramycin and chloramphenicol. The most active drugs were chloramphenicol, aureomycin, penicillin and streptomycin. Neomycin caused an inhibition only in high concentrations. *Nocardia asteroides* was inhibited by aureomycin, chloramphenicol, terramycin and myorzone. Variation in susceptibility was not as striking with the strains of *Nocardia* tested. There was, however, enough variation to warrant sensitivity studies in clinical cases. Mice infected with *Nocardia* showed a slight lengthening of survival with terramycin (daily dosage 25–50 mg./kg. body-weight), but all died within three days. Chloramphenicol gave encouraging results when a dosage of 25 mg./kg. was given, but doubling the dose resulted in the death of all animals tested.

From a historic viewpoint, it may be of interest to mention that Weld extracted an antibiotic from Spanish moss, which was active *in vitro* aginst *C. hominis*; and that Irving, Fontaine and Doolittle produced an antibiotic, tomatin, from tomato plants, which showed marked fungistatic power against *T. mentagrophytes, E. floccosum, C. albicans*, and *M. audouini.*

CLINICAL APPLICATION OF ANTIBIOTICS IN MYCOTIC DISEASES

The enthusiasm accompanying early laboratory investigations was soon followed by sober realization that only a few of the investigated antibiotics had any limited effect upon the mycoses of the skin. In the treatment of actinomycoses, however, antibiotic therapy has achieved greater success.

TREATMENT OF ACTINOMYCOSIS

Actinomycosis is probably the only deep mycosis that responds favorably to aureomycin. It responds particularly well to penicillin, despite discrepancy of findings both *in vitro* and *in vivo* of several investigators. Numerous studies report the successful treatment of cervicofacial actinomycoses. Several other investigators report similar results in the treatment of pulmonary and abdominal actinomycoses.

To these findings, we add our clinical experience in treatment with penicillin of two cases of cervicofacial *(N. asteroides)* and one abdominal case of *(A bovis)* actinomycoses. Three guiding principles are of paramount importance in the successful penicillin therapy of actinomycosis :

(1) Initial therapy should be instituted with massive dosage.

(2) Therapy with smaller dosage should be continued for at least one month after apparent clinical cure.

(3) Associated bacterial infection must be controlled.

In cervicofacial actinomycosis, daily intramuscular injections of 600,000 units of penicillin may be adequate. In cases of pulmonary or abdominal actinomycosis, however, dosage should be increased up to 1–2 million units per day. In severe cases, an even more massive therapy is indicated during the first five to seven days, and continuous intravenous drip therapy is recommended (10,000,000 U./1,000 cc. normal saline, or glucose 5 per cent). Sanford and Barnes increased this daily dosage to 40 million units without toxic effect. Intravenous therapy should not be interrupted nor changed to the other arm unless a phlebitic reaction appears, but this reaction is practically nonexistent among the purified products of today.

A combination of intravenous and intramuscular therapy in treatment of actinomycosis is not only permissible but indicated in certain instances. Relative to the intramuscular therapy, compenamine should be mentioned. This a new penicillin form, which has appreciably reduced allergic reactions. Blood penicillin levels should be maintained between 0.5 and 1.5 U./cc. in order to combat the infection effectively. Sensitivity studies of each strain would be the proper approach, but a certain *in vitro* resistance to penicillin should be no deterrent to penicillin therapy, since high penicillin levels can be reached and maintained with the massive therapy indicated above. As a rule, 0.1 units of penicillin are sufficient, but even if 10 U./cc. are required for successful therapy, the organism should not be considered penicillin resistant.

The concomitant bacterial infection generally produced by gram-negative cocci must be combatted vigorously. Aside from the hypothetical synergism that exists between actinomycetes and these asscciates, it will be recalled that some of these organisms produce penicillinase. Furthermore, it is possible that these bacteria reduce the oxygen potential, thus producing a more favorable terrain for the propagation of anerobic actinomycetes. It becomes, therefore, a paramount therapeutic necessity to administer, simultaneously with penicillin, either streptomycin, or the sulfonamides in appropriate dosage form. Adequate drainage of the sinuses during treatment of the cervico-facial type is necessary, and local penicillin applications (500–1,000 U./cc.) are also helpful.

THERAPY OF TORULOSIS

The recent report of Wilson and Duryea presents hope that torula meningitis, one of the most dreaded and generally fatal disease of the meninges, may be successfully treated. Therapy, because of cerebral irritation, consists of both intrathecal and intravenous injections of actidione. Twenty milligrams of this drug injected intrathecally is followed by daily administration of 60 milligrams intravenously. Therapy should be continuous for several months.

SUMMARY

A review of laboratory investigation of antifungal antibiotics has been presented.

(1) Antibiotic treatment of superficial fungus infections is unsuccessful.

(2) Actinomycosis is the only deep mycosis responding favorably to an antibiotic (penicillin). This response is predicated upon massive dosage, continuous treatment following apparent clinical cure and treatment of concomitant bacterial infection.

(3) Actidione may prove useful in the treatment of torulosis, although further clinical trial is indicated before a final conclusion can be reached.

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Seborrhoeic and Pyogenic Infections in Children

By

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Important work has been done during the past decade in an effort to establish a specific cause for seborrhoeic dermatitis. A scurfy head more technically known as pityriasis capitis is known to contain numerous organisms, amongst which the ***Pityrosporon ovale***, or bottle-bacillus, has attracted the most interest. Although this organism has been cultured and its morphology thoroughly studied, the evidence that it is a true pathogen is very meagre. It is now generally agreed that the various inflammatory reactions usually described as seborrhoeic dermatitis are mainly the result of an increased susceptibility to the milder pathogenic cocci and possibly even to some of the saphrophytic organisms.

The seborrhoeic subject is usually plump with a greasy skin and a tendency to sweat readily, so that the folds of skin are unduly moist. Associated with this, and possibly dependent upon some abnormality of sweat secretion, is an increased alkalinity of the skin surface which makes it more suitable for bacterial growth; in other words, the acid mantle of the skin is imperfect. There is evidence, too, of failure of the seborrhoeic glands to elaborate some of the long-chain fatty acids which in themselves inhibit or destroy bacteria.

It is not surprising, therefore, that the skin on the scalp of the so-called seborrhoeic subject has an increased bacterial flora and this may lead to erythematous reactions beneath the scale which complete the picture of a seborrhoeic dermatitis affecting the scalp. Frequently the condition does not stop there, but scaly patches of dermatitis spread to the forehead behind the ears and inside the pinnae and there may be similar lesions in the folds of a fat neck or about the alae nasi or the angles of the mouth. In these situations the depth of colour

increases, the skin surface often breaks and leads to crusting with plasma or scabbing with dried pus.

Lesions similar to these often complicate simple impetigo of the face or neck and if pustular lesions occur on the scalp in such subjects the whole head may soon be a mass of purulent sores. Although impetigo may usually be cleared up within a few days by local treatment alone, we have seen unfortunate children of the seborrhoeic type whose pyogenic infection of the scalp has resisted systemic treatment with the antibiotics and every type of local remedy. One may never succeed in getting the unfortunate child entirely free from some septic fissures about the ears, from marginal blepharitis or from scabbed sores in the scalp, and acute relapses may be frequent. Such a child may spend more than half its first decade in hospital.

It is cases like these that make us realise how little we know about the various factors which determine tissue resistance or susceptibility. For instance, in a case of furunculosis it is possible to increase the known specific immune bodies of the serum ten or fifteen fold by a course of staphylococcal toxoid–vaccine; yet the individual may continue to get small boils or staphylococcal infections of the skin. It is therefore assumed that there is a common problem in dealing with the seborrhoeic and pyogenic infections o' 'e skin and that is why the conditions are considered together.

Let us first consider the clinical problem of scurf and the so-called seborrhoeic dermatitis of the scalp. It is unnecessary to give more details of the clinical condition and many cases in which the disease is limited to the scalp will respond to a daily inunction of an ointment consisting of:

Precipitated sulphur	10 gr
Salicylic acid	10 gr
Emulsifying ointment to	1 oz

followed by frequent shampoos with water softened by the addition of a little bicarbonate of soda or borax and the use of carbolic soap. When eventually the scalp remains free from scurf after washing it may sometimes be kept so by the daily use of a simple lotion containing:

Liquid phenol	10 m
Glycerine	20 m
Solution of mercuric chloride to ...	1 oz

If scurf returns, the ointment should be rubbed in again and after a day or two, washed out.

More difficulties will be encountered when the condition of retro-auricular intertrigo is present. This is seen as angry red fissures which occupy the deeper creases behind the ears. Early cases may respond to cleansing with warm saline and then the application of a solution of proflavine, but when the skin becomes

dry and cracks, the yellow oxide of mercury ointment will be found useful if applied at night. In resistant cases a chloromycetin cream or ointment may be found helpful and the more obstinate cases which reach hospital may respond remarkably to 1 per cent of aureomycin in a simple ointment.

Penicillin used locally in an ointment or cream has produced so much eczema and dermatitis that dermatologists practically never use it and it may be that some of the other antibiotics will ultimately have to be abandoned because of their sensitizing effects. If the modern antibiotics are not available, watery solutions of the various dyes may be tried and the obstinate case may respond favourably to a small dose of x-rays. How this acts is uncertain but it may influence a seborrhoeic factor which we presume is at fault.

With the seborrhoeic lesions described above, pale scaly areas of dermatitis may occur on the upper part of the trunk and the arms and in the mid-line of the back and the chest. Sometimes these lesions have a circinate pattern which is suggestive of ring-worm, but the edge is less well defined and the centres of the lesions are often pale pink and scaly and are suggestive of what is called a circinate seborrhoeide. The greasiness of the skin may be reduced by adding a little ordinary soda to the child's bath and washing well with carbolic or Neko soap; then the sulphur and salicylic ointment can be rubbed on occasionally and this may be alternated with painting with 1 per cent solution of crystal violet in water, or with Liquor Tinctorious Aquosus NF. For the lesions on exposed parts of the body or on the face or neck the lotion of phenol and mercuric chloride, as previously mentioned, may be used, or 2 per cent of phenol and 2 per cent of precipitated sulphur may be added to calamine lotion. In the plump child with a greasy skin it is thought that restriction of starch, sugar and fat is desirable and extra vitamin B, in the form of Bemax, Marmite or dried yeast tablets, assists the metabolism of carbohydrates and perhaps makes the skin less susceptible to staphylococcal infection. Clinical experience gives little support to the prescribing of specific vitamin fractions is these cases.

PYOGENIC INFECTIONS

In children the commonest lesion is impetigo contagiosa. The clinical picture of scabbed or crusted angry red sores which spread locally from the initial lesion and become numerous in a few days is too familiar to require further description. However, bullous lesions which may be large and confusing remind us of the similar condition which occurs in the newly-born and is called "pemphigus neonatorum". The bullae are flaccid and easily rupture and then the central part of the lesion often dries and becomes pale and leaves a circinate pattern which is easily confused with ringworm. The evolution of the pyogenic lesion is much more rapid as a rule than that of tinea circinata so that, whereas impetigo with its bullous or circinate forms may cover one side of the face or neck in a few days, a ringworm infection is likely to take a week or two before it is so extensive. If

in doubt, a scraping of the edge of the lesion, mounted in liquor potassii and examined under the high power of a microscope, will reveal mycelial threads if the case is one of ringworm.

Sometimes in impetigo scaly pink pale patches are seen which are very similar to those described as localised patches of seborrhoeic dermatitis. These were called impetigo pityroides by Sabouraud and their existence may be taken as some evidence of the relationship between seborrhoeic dermatitis and mild reactions to pyogenic infection. On the other hand, their occasional resistance to local treatment implies that they may be allergic responses to pyogenic infection of the skin elsewhere or to focal infection with streptococci or staphylococci in teeth, tonsils or sinuses.

Finally, in debilitated subjects, ulceration may occur under a crusted sore of impetigo, giving the ulcerative variety which is sometimes called "ecthyma". This is the only form of impetigo which is likely to leave a scar, because the inflammatory process has in this case destroyed the epidermis and involved the dermis so that ultimate resolution is associated with fibrosis.

Since the observations of Sabouraud to the effect that most cases of impetigo were primarily the result of infection with streptococci, further bacterial studies have shown staphylococci to be more commonly responsible for the infection. When clinical experience is closely related to frequent bacteriological studies, it becomes possible in some cases to recognise clinical differences between the two infections, but this has no practical significance because the treatment in both cases is the same. If there is a real need to use an antibiotic systemically it is desirable, in any case, to isolate the organism concerned and to determine its sensitivity and in particular whether it is sensitive to penicillin, which is the most economical antibiotic for routine use.

In impetigo, infections of the creases and folds are common, as in seborrhoea, and the hair follicles are also susceptible especially in the so–called seborrhoeic subject. This becomes manifest by the appearance of boils, carbuncles, blepharitis, and in the older child, pustular acne. Infection of the hair follicles at any site is always more likely to occur when the skin is unduly greasy, whether the greasiness is the result of seborrhoea or whether the skin has been made greasy with ointments. It should be remembered that oil acne occurs as an occupational hazard in adults whose skins are unduly contaminated with grease at their work. As a general principle, therefore, greasy preparations should be avoided in the moist and active pyogenic infections.

TREATMENT

The same principles may be applied to the acute lesions of impetigo or intertrigo and some of them may be followed with success in the treatment of follicular infections. When the skin surface is broken by exudation it is well to

bathe the skin in normal saline, using a mild antiseptic soap such as Neko or carbolic soap. Scabs and crusts, if not removed by gentle bathing in saline to which peroxide may be added, may often be softened by applying a hot compress of normal saline for half an hour perhaps repeated once or twice, after which the softened crusts may be detached. Then one should dab on a simple lotion, such as liq. proflav, or the tannic acid lotion of the National Formulary and, if exudation persists, the skin may be dried by applying calamine lotion which may be the addition of 0.1 per cent of mercuric chloride. Sometimes an antiseptic dusting powder is particularly useful to ensure drying and for this purpose Conspers Hydrarg Subchlor Co (BPC) will be found to be both astringent and antiseptic. The dry intact normal skin is invulnerable to the pyogenic cocci and impetigo can usually be swiftly localised with the above technique. Solutions of other types may, of course, be used and practitioners may prefer one of their own favourite lotions.

Penicillin or sulphonamides should never be used locally in either a cream or ointment or powder, because the skin may be made hypersensitive and troublesome eczematous reactions may follow. Sometimes a very severe sensitization to sunlight follows the use of a sulphonamide locally and dermatologists rarely employ these substances for local treatment. Only if a deeper redness spreads from a lesion and new lesions are developing out of control, is it necessary to resort to systemic therapy with penicillin or one of the other antibiotics. On the grounds of economy the former should always be used if the organism is sensitive to it. Exceptionally, it will be found advantageous to use chloramphenicol or terramycin, and perhaps aureomycin preparations will soon be available for general use.

Occasionally, a child develops a habit of picking the infected lesions of intertrigo and impetigo and then no progress can be expected from local treatment. In such cases remarkable improvement may follow the use of a sedative, such as phenobarbitone ½ gr two or three times a day for a week or two. It may also be necessary to break the habit of scratching during light sleep by restraining the hands. This may be done by tethering the wrists to the girdle of the nightdress or pyjamas; or, in young children, cylinders of cardboard may be slipped on the arms and pinned to the garment at the shoulders.

In most cases, the patient is a healthy child and there appears to be no indication for modifications of the diet or the addition of extra vitamins. Should the child be anaemic and listless with a poor appetite, the addition of oil and malt or a vitamin–iron medicine may considerably accelerate resolution.

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Management of Gonorrhoea

By

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Gonorrhoea can now be simply and effectively treated with any one of a number of drugs viz. penicillin, streptomycin, aureomycin, chloramphenicol or terramycin without calling upon the sulphonamides, the drugs that originally established its chemotherapy on a sound basis. The GP, though he may be bewildered by the wide choice of available drugs, must sometimes feel that now the disease could obviously be treated in his surgery, the services of a specialist are no longer necessary. The purpose of this article is not merely to compare the advantages of the different antibiotics, but to show that the treatment of the infected patient is but one facet of the successful management of this disorder.

SULPHONAMIDES

For the treatment of gonorrhoea the sulphonamides have now had their day. The writing on the wall appeared during World War II in Italy, as the wards of the military hospitals filled with sulphonamide-resistant cases and recourse had again to be made to irrigations and fever treatment. Though the situation was saved by the introduction of penicillin, the ineffectiveness of the sulphonamides in gonorrhoea has in fact gone on increasing in the subsequent years. Indeed, in London in 1949, Dunlop had no less than 176 failures among 205 patients treated with these drugs. However, the sulphonamides have one advantage: they have no action on *Treponema pallidum*, whereas all the effective antibiotics have. For this reason, the sulphonamides still have one temporary indication in the treatment of gonorrhoea where a patient has coexistent sores that are undergoing darkfield examinations to exclude syphilis.

PENICILLIN

Penicillin has lost none of its efficacy against this infection; 90 per cent of cases can be cured by a single injection. An effective serum concentration of penicillin must be maintained for 8–12 hours; and this cannot be achieved by using penicillins in aqueous solution unless we inject them frequently (which gives the patient unnecessary pain) or in extravagant doses. The three "repository" penicillins–procaine penicillin, procaine penicillin with aluminium monostearate (PAM), and the diamine penicillin now under trial–readily achieve the prolongation required and produce peak concentration high enough for this purpose. All of them have the same dose– one intramuscular injection of 300,000 units (1 ml).

Penicillin is, of course, highly active against *T. pallidum*, and the drug should therefore be avoided if possible in any patient who has genital sores that require repeated dark-field tests, and who needs serum examinations to exclude syphilis; also whenever serum tests for syphilis have been positive or semi-positive

and need repeating to exclude false-positive reactions; or when there is a history of exposure with a known syphilitic. In these circumstances every effort is made to treat the patient without penicillin so as not to mask syphilitic infection if any is present but allow it to declare itself as quickly as possible.

If it is impracticable to do without penicillin or where it has already been given the patient must receive enough to cure a case of syphilis and be kept under observation for many weary months as if he or she had actually had the disease. For this a "single" injection of PAM (4 ml into each buttock) may be used, which will produce an effective serum level of penicillin for a week. With the new diamine penicillin, "Bicillin", which will shortly be available, an effective serum level may be expected to last for a fortnight after a single injection, and in some cases for as long as a month.

Penicillin may also be given by mouth; 500,000-1,000,000 units will suffice for most cases of gonorrhoea. This should not be given in a single dose but spread over 6-12 hours. The absorption of the drug is less certain by mouth however, and this route is not recommended as a routine, but only for patients who refuse to have an injection, and in circumstances unfavourable for using a syringe e. g. during journeys by air.

STREPTOMYCIN

Single intramuscular injections of 1 gm. of streptomycin give results as good as those with penicillin and some use streptomycin as a routine. Its minor disadvantages are that the injection is slightly more painful, and theoretically there is a greater risk of dermatitis developing in those who handle the drug. Attacks of giddiness following this single dose are not much more common than the occasional sidereactions of penicillin therapy. Organisms become resistant to streptomycin more readily than to the other antibiotics and the gonococcus is no exception—streptomycin-resistant gonococci were reported by Ryan last year. However, with the other effective antibiotics held in reserve to deal with failures, the general dissemination of such a resistant gonococcus is improbable.

Streptomycin in small doses is the antibiotic least likely to mask syphilis, though in higher dosage it will abolish *T. pallidum* from the sores of early syphilis and will heal syphilitic chancres. In small doses its antisyphilitic effect is probably only temporary and it is therefore the most suitable antibiotic for treating cases of gonorrhoea which seem more than usually likely to have syphilis as well, and which have not responded to sulphonamides. For such patients 0.5 gm. is a suitable dose.

ANTIBIOTICS BY MOUTH

Gonorrhoea can be cured with oral doses of aureomycin, chloramphenicol or terramycin. Any of these drugs will give results only slightly inferior to those obtained with penicillin. A total of 2.0 gm. should be given by mouth as a

single dose, as 2 doses of 1.0 gm. each with 4 hours interval between them, as two 250 mg. capsules 4 times a day for 1 day, or as 1 similar capsule 4 times a day for 2 days. A preparation of chloramphenicol for intramuscular injection has also been tried, and single injection of 1.0 gm. in this form is effective.

Various observers have reported a serious and even fatal aplastic anaemia following the use of chloramphenicol. This complication is unlikely to arise from the small doses used in gonorrhoea, but these might sensitise a patient for some future occasion when he required the drug more urgently, as for typhoid fever. For this reason aureomycin and terramycin are preferable.

SIDE EFFECTS

All the antibiotics may produce irritative gastro-intestinal side-effects, other sequelae resulting from interference with the synthesis of the vitamin-B complex and still others from moniliasis due to the suppression of thrush-inhibiting organisms. With the small doses used in treating gonorrhoea these side-effects are few, mild and transient. All the orally administered antibiotics may cause ano-rectal burning and irritation. This is perhaps the most troublesome occasional complication in cases of gonorrhoea treated with these drugs.

At present the orally administered antibiotics are expensive, and so long as they remain so they will have no advantage over penicillin in the treatment of gonorrhoea. In time, however, they may enjoy wider use because of their ease of administration. Like penicillin they may all mask syphilis, and for this reason they should not be used when syphilis is more than usually likely.

The actual treatment of gonorrhoea, now that it is so simple, is no longer the most important feature in its management. Of equal, or greater importance are diagnosis, surveillance and contact-tracing.

DIAGNOSIS

Gonorrhoea may be confused with non-specific urethritis. In this condition the discharge is usually thinner and less profuse than in gonorrhoea, but it is not uncommon to find gonorrhoeal-looking discharges in which gonococci can be proved to be absent (these often contain trichomonads). While the sexual origin of gonorrhoea in the male is beyond doubt, that of non-specific urethritis remains unproved. One would certainly hesitate to say in a court of law that all cases of non-specific urethritis in married men arise from infidelity in one or both partners. The doctor can never be sure which of his venereal cases may cause him, to give evidence in the courts at a later date, and for that reason alone an accurate diagnosis is essential.

In the male the diagnosis can usually be made by means of a smear. In rural areas the venereal diseases clinics may only be in session once or twice a week and the GP may consider it wrong to keep a patient with an active discharge for some days before giving treatment. If he gives one of the antibiotics without

first taking a smear, and the case turns out to be one of non-specific urethritis that does not clear up, accurate diagnosis will be impossible by the time the patient reaches the clinic. It is always better to take a smear before starting treatment; the smear can be sent with the patient when he attends the clinic some days later.

In the female, diagnosis by smear is not as reliable as in the male. Urethral and cervical cultures have to be carried out as well, and these can only be performed easily at the clinic, or by somebody suitably equipped. Females, for this reason, are always best left untreated until full examination can be made.

SURVEILLANCE

The results of treatment are now so good that there is usually little to be found in the post-treatment tests for gonorrhoea in male patients which is not evident at urethral inspection and/or by crude examination of the urine. It is customary, neverthless, to make a number of prostatic tests to exclude the presence of pus. What is much more important, of course, is to watch for the development of non specific urethritis or syphilis.

Non-specific urethritis follows an attack of gonorrhoea in about one case out of ten. It is sometimes very resistant, and expensive drugs like terramycin in doses of 6 gm. or more may have to be used in its treatment.

The incidence of early syphilis in this country is declining markedly. It is probable also that the masking of syphilis by the antibiotic treatment of gonorrhoea is largely a bugbear, for all the evidence suggests that developing syphilis is being cured in the incubation period rather than hidden. Nevertheless, during the three months in which prostatic examinations are being made and a watch kept for non-specific urethritis, serum tests for syphilis should be performed each month, with a final test four months from the onset of treatment. By this time the patient may be considered not only cured of his gonorrhoea but also out of danger from the development of other venereal diseases arising from the same sexual exposure.

CONTACT-TRACING

From the public health standpoint, finding the source of the gonorrhoea and examining all those exposed to the infection is just as important as treating the patient who seeks advice. In this country voluntary persuasion and the use of the " contact slip " is usually employed, but there are also social workers who can be called upon if required. Often enough the person responsible for the infection may live outside the area of both practitioner and clinic. In these circumstances the clinics are better equipped to ensure that persons who are at large are persuaded to attend for examination at their local centres, and to confirm that they have done so.

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Pellagra

By

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The name Pellagra comes from two Italian words, pella (skin) and agra (rough).

Definition: Pellagra is a disease caused by deficiency of nicotinic acid in the diet and characterised by a triad of symptoms viz:

Dermatitis
Diarrhoea
Dementia

Etiology: Though pellagra is defined as due to nicotinic acid deficiency, yet various theories are mentioned in the causation.

(1) Maize intoxication theory of Combroso Stockman; he has isolated a toxin from maize which caused the same changes in the nervous system of monkeys as found in pellagra in human beings.
(2) Protein deficiency theory of Wilson.
(3) Aminoacid deficiency theory of Goldberger and Tanner.
(4) Alimentary tract infection theory. The Thompson Mc Fadden Commission attaches importance to intestinal infection as a probable factor.
(5) Vitamin deficiency theory–As in Beriberi, this theory has more supporters. Goldberger believed in a Pellagra Preventive Vitamin.
(6) W. R. Aykroyd and N. Swaminathan found in 1940 that the diets of communities affected with pellagra contained more nicotinic acid than required.

Hence the continued intoxication and vitamin deficiency theory is favoured. According to this theory certain articles of diet contain a poison which causes the disease and which can be neutralised by nicotinic acid.

Symptoms: The lesions on the skin are very characteristic with the distribution on the back of the hands, face, neck, upper part of the chest and forearm. The eruptions are symmetrical. The elbows, knees, the region above the anus and the genital not infrequently show involvement. The eruption starts as acute dermatitis showing the presence of erythema, swelling, vesicles and later desquamation. The lesions on the hands are well defined and have the glove distribution.

Digestive Tract: In the mouth there may be sensations of heat with loss of taste. Stomatitis and salivation are common. Hydrochloric acid in the stomach is often reduced or absent. Anorexia, nausea, vomiting and diarrhoea are other features.

Nervous system: Headache and vertigo are common. Mental features of this are marked confusion, dullness, irritability, feelings of anxiety and depression, change in disposition and hallucinations are present. Symptoms due to changes in the spinal cord produce disturbances of sensation, paralyses of sphincters and loss of reflexes.

Diagnostic fealures: (1) Stomatitis and glossitis
(2) Dermatitis
(3) Dementia
(4) Diarrhoea.

Differential diagnosis: Ariboflavinosis.

In this condition the skin and nerve lesions of pellagra are absent.

TREATMENT

(1) For stomatitis—weak potassium permanganate mouth wash is essential.
(2) For dermatitis—avoid greasy applications. Calamine dusting powder is the best.
(3) For diarrhoea: Hydrochloric acid is recommended.
(4) Nicotinamide is given in 300 to 400 mgm. I. M. or I. V.
(5) Diet is to consist of fresh milk, orange juice and foods rich in B & C as liver, kidney, eggs and fresh vegetables. Brewer's yeast is valuable and is given in daily doses of 2 tablespoons mixed with tomoto juice or milk.

DERMO-QUINOL

Dermo-Quinol is a 4% Iodochloroxyquinoline in a vanishing cream base. It is remarkably effective in the cure of almost all forms of Pyococcal infections of the skin, such as 'Impetigo' 'Folliculitis', 'Impetiginised Eczema', 'Angular Stomatitis', 'Post Auricular Dermatitis', 'Furunculosis', 'Perionychia' (chronic). It is also an ideal agent for the treatment of chronic ulcers which do not respond to ordinary medicaments.

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KNOWLEDGE FROM WORLD CONTEMPORARIES

Cortisone in the Treatment of Syphilitic Eye Disease

The effect of cortisone on tissues in an inflammatory state, or exhibiting an allergic reaction, is to control the inflammatory and exudative phase of the disease. It will reduce the amount of vascular congestion, and where capillary permeability of vessel walls is increased by disease, will restore it to normal levels.

The effect of this is to reduce the amount of exudation into the tissues. Experimental evidence indicates that cortisone inhibits the early stages of fibrosis in a healing process and also inhibits phagocytosis and new vessel formation.

Clinically, the effect can be seen when cortisone is used on an inflamed eye. The amount of congestion is reduced, making the eye "white" within 2 or 3 days or sooner, and the patient experiences a dramatic relief of symptoms. The effect, however, is not permanent. If the drug is stopped before the condition treated has run its full course, a "relapse" will occur and all the original inflammatory signs will reappear. Hence it seems that cortisone must be continued throughout the natural life of the condition treated, and it is essential that other concurrent therapy, appropriate to the case, must also be applied. Cortisone is in no sense a bactericidal drug and, indeed, unless the primary source of infection can be stamped out, will inhibit the body's natural methods of defence against bacteria.

Diseases of the anterior segment of the eye respond to topical application of cortisone, that is by drops, ointment, or sub-conjunctival injection.

Topical application gives as good results as systemic administration in anterior segment disease. In has the advantage that the patient is not exposed to the side-effects of systemic therapy, and that the treatment can if necessary be continued over a long period. Less cortisone is used in topical than in svstemic therapy, the most economical method being by sub-conjunctival injection, less than 1 ml. being required every few days.

TOPICAL ADMINISTRATION

Drops: (5 mg. to 1 ml.). Cortisone is supplied as a suspension of 25 mg. cortisone acetate in 1 ml. normal saline, with 1-5 per cent. benzyl alcohol added as a preservative.

This suspension is used in a 1:5 dilution, since if used at full strength the drops irritate the eye. Drops are used every 2 hrs for the first 24-48 hrs, then every 4 hrs, and later in a so-called maintenance dose, twice daily.

Ointment: This is prepared by distributing the cortisone in a lanoline base in a strength of 10 mg./g. Ointment is used every 4 hrs initially, the application being gradually reduced to twice daily.

Sub-Conjunctival Injections: These contain 0.4 ml. of the standard saline suspension; each injection thus contains 10 mg. cortisone. This is injected

under the bulbar conjunctiva where it produces a white chalky deposit which will slowly absorb over a period of up to 7 days, when another injection is indicated. These injections are not suitable for use over a prolonged period; sub-conjunctival fibrosis is produced at each injection site and after about six injections have been given it becomes technically difficult to obtain further satisfactory sub-conjunctival deposits of cortisone.

Retro-Bulbar Injections : 0.4 ml. standard saline suspension is injected with a long retro-bulbar needle into the retro-ocular space. It was hoped that this method would be suitable in treating diseases of the posterior segment but it has failed in our hands to give satisfactory results and has now been abandoned.

SYSTEMIC ADMINISTRATION

Systemic administration of cortisone can be carried out by giving tablets by mouth, or by intramuscular injection of the standard saline suspension. The dosage in both methods is 200 mg. (in four divided doses 6-hrly) over the first 24 hrs, 100 mg. (in four divided doses 6-hrly) over the second 24 hrs, and 50 mg. (in two divided doses daily) subsequently for about 10 days.

A count of circulating eosinophils in the blood can be used to gauge whether the dosage is effective during the first 2 days; a fall of 50 per cent. in the count should be obtained. The dosage of cortisone may have to be increased or decreased according to the level of the count. The subsequent level of the eosinophil count over the rest of the period does not bear any relation to the adequacy of the dosage.

This is better judged by watching for a satisfactory response in the clinical condition.

Systemic application is used in diseases of the posterior segment, e. g. retro-bulbar neuritis, papillitis, and choroiditis, and in such conditions topical application has little effect. When using the drug systemically for ocular lesions due to syphilis, the possible effect of the cortisone on the general syphilis has, of course, to be considered.

INTERSTITIAL KERATITIS

Our series includes 28 cases of interstitial keratitis in congenital syphilis, and it is in this field of ocular syphilitic disease that cortisone has been used most extensively. Interstitial keratitis is a disease process which also involves the anterior uveal tract, in addition to the cornea.

The earliest signs of the disease, seen by examination with a slit-lamp microscope, include a slight oedema of the endothelium of the cornea and discrete precipitates in the corneal stroma. These are followed in a few days by the typical progressive stage, with marked photophobia, watering, pain, and vascular congestion around the cornea, which rapidly becomes hazy, giving the typical ground glass appearance. This haze comprises :

(1) surface haze, produced by epithelial oedema, giving an irregular dull appearance to the surface of the cornea.

(2) haze in the corneal stroma proper, produced by oedema and cellular infiltration, mainly of lymphocytes, into the spaces between the individual cells comprising the corneal lamellae.

(3) deep haze on the endothelial or posterior layer of the cornea, composed of oedema and deposits of cells and debris.

This stage is followed by a rapid invasion of the cornea by blood vessels, which spread inwards from the periphery, producing the well-known "salmon patch". It continues for 3–4 months and is accompanied by acute discomfort. During this stage, a necrosis of corneal cells and exudates occurs, and polymorphonuclear leucocytes and phagocytic cells appear. A phagocytosis of necrosed tissue and a clearing of the corneal opacity then begins. The final stage is one of retrogression, in which the patient experiences relief from his symptoms. The blood vessels begin to close off, the corneal opacities clear, and there is a process of fibroblastic proliferation of cells from the invading vascular tissue, and a proliferation of the fixed corneal cells. This is the stage of repair and may be prolonged for several months, or as long as 2 years. The closed-off blood vessels remain as permanent threads of fibrous tissue in the cornea and have been seen as long 50 years after the attack.

Here then is a self-limiting condition, characterized by exudation, congestion, and new vessel formation, and, later on, by fibrosis in the cornea and anterior uveal tract. It is known that cortisone will reduce all these stages of inflammation. Cortisone will relieve the distressing symptoms of photophobia and pain, and will rapidly reduce the congestion of the acutely inflamed eye, so that the patient under treatment is relatively very comfortable.

In cases treated by us in the early stages, that is, during the progressive stage of corneal haze before corneal vascularization has appeared, the disease has been halted; and in six cases we have seen the opacity begin to clear, without any vascularization occurring. The opacity clears quickly at first, because in this early stage much of it is due to oedema. If cortisone is stopped too soon in these cases, or if dosage is inadequate to control the reaction, a typical relapse occurs. It seems impossible to say when cortisone should be stopped in these cases in which cure is simulated and the physical signs are suppressed. The only method seems to be by trial and error, stopping treatment and watching for a reappearance of photophobia and redness. Recurrences are easily controlled by a re-application of cortisone, and in our experience it has been necessary to keep on the treatment for 3–4 months.

Most of our cases were in the stage of vascularization when treatment was begun. The effects of cortisone in this stage are variable. Symptomatic relief

is obtained within a week, or sooner, and a gradual halt is called to further vascularization. When treatment is commenced in this stage it takes longer to bring cases under control, depending upon the amount of corneal vascularization present, and it may take two weeks before the eye is quiet. Here again it is difficult to say how long to continue cortisone.

Some of the cases relapsed whilst on treatment, probably because of inadequate dosage, or because the cortisone itself was insufficient to control a severe reaction. When this occurs, if a change is made from sub-conjunctival injection to drops or ointment, the case will respond more satisfactorily. It seems necessary to prolong treatment for at least 3 months, and three of our cases were kept on treatment for 12 months before the eyes would remain permanently quiet.

The most important part of the treatment is still the concurrent local and general therapy. Local treatment consists of atropine drops to the eye given every 4 hours and must be continued throughout, and after, treatment with cortisone. The general treatment has consisted of a heavy course of intramuscular penicillin, one million units daily over a 10-day period, followed by a course of arsenic and bismuth.

It does not, therefore, appear that the actual length of time of treatment is reduced by the use of cortisone, but I think that the corneal scarring will be less and the visual results will be better in many cases. This is the final criterion by which the value of cortisone will have to be judged.

The majority of our cases were treated as inpatients during the first 2 weeks, with intensive penicillin and frequent cortisone applications. When the condition is under control, cases can well be treated as out-patients. Atropine and cortisone ointment are both used 4 hrly until the condition is quiet, and thereafter twice daily. This is not a rigid rule; if the case does not respond quickly enough to ointment, then 2 hrly drops can be used, or the effect can be tried of sub-conjunctival injections at 7-day intervals.

Where permanent corneal opacities remain after an attack of interstitial keratitis, particularly affecting the central area of the cornea, the operation of corneal grafting is eminently suitable, provided the condition is stationary. The corneal opacities can clear even up to 2 years from the start of the attack, so that grafting need not be considered until this interval has gone by. Grafting has been carried out, in the earlier stages of interstitial keratitis where the Wassermann reaction is positive. With the reduction in the ammount of the corneal scarring which occurs in cases treated with cortisone, corneal grafting might not be so often indicated.

The type of case at present requiring grafting is that in which both eyes are badly scarred and the corneae are free from active disease and vascularization. Also there should be no defects, so far as it is possible to determine in the deeper

structures of the eye, such as posterior synechiae, optic atrophy, or diseases of the retina and choroid.

IRIDOCYCLITIS

Secondary syphilitic iridocyclitis is characterized by its acute onset and the severity of the inflammatory and exudative signs. A profuse exudate into the anterior chamber occurs, with rapid formation of adhesions between the iris and the underlying lens of the eye. If not rapidly controlled, these changes constitute a serious menace to the patient's vision.

Treatment with cortisone brought about a rapid reduction in the amount of exudate with subsequent improvement in vision. Topical application gave as good results as systemic application, with none of the risks of side-effects. Since iridocyclitis is a self-limiting condition, in which coincident anti-syphilitc treatment can be actively applied, cortisone is a useful adjuvant to treatment. This type of case does well without cortisone therapy but where the severity of the exudative features threatens vision, cortisone reduces this risk.

I have not seen a case of Jarisch-Herxheimer reaction leading to an acute flare-up of an irits or interstitial keratitis, but it is likely that in such a case topical cortisone therapy would reduce the severity of the exudative features whilst concurrent therapy is still continued.

In chronic iridocyclitis cortisone gives inconsistent results. In general, results are not good because the underlying cause cannot be found, and the natural history of the condition is prolonged and subject to recurrences. Short courses of cortisone alleviate the symptoms and signs during the period of application but, as might be expected, relapses and recurrences are common when the drug is withdrawn. It remains to be seen whether long courses of cortisone, topically applied, may be of some benefit in these cases, or whether, in the end, it will prove a disadvantage, or even, a positive-danger.

CHOROIDITIS

Since this is a disease of the posterior segment of the eye, topical therapy is ineffective in controlling it, and systemic cortisone is necessary. Many cases of this condition, in its focal form, have been reported in the literature, and we have treated six. If treated in an early stage, some cases appear to resolve quickly, but those in a later stage with permanent damage to the choroid and retina are not affected by the administration of cortisone.

RETRO-BULBAR NEURITIS AND PAPILLITIS

The value of cortisone in these conditions is difficult to determine since many of these cases undergo spontaneous remission. It is possible that systemic cortisone would reduce the amount of exudate and swelling in the optic nerve and congested, inflamed tissue, but it would not prevent damage, by toxins, of the optic nerve fibres.

A. N. Ashworth, B. J. V. D., Vol XXX, No. 1, March. 1953, Pp. 3.

Occupational Dermatoses

The industrial physician, like the physician in private practice, encounters, with but slight variations, what are generally referred to as the common dermatoses—the numerous varieties of eczema-dermatitis, the pyoderms, fungal infections, affections such as psoriasis, pityriasis rosea and lichen planus, the degenerative lesions as senile keratosis and epithelioma, drug eruptions, the common wart, herpes zoster and others.

THE HANDS

Perhaps the most troublesome condition encountered in industrial dermatologic practice is that of eczematous eruptions of the hands. In fact hand-eczema offers difficulties even to the experts and when it is not of an industrial nature, for inflammatory changes are subject to modifications by innumerable complicating factors resulting in variable and often indistinguishable clinical pictures. What may begin as a mild contact dermatitis of the hands is not infrequently aggravated by home remedies, and then secondarily infected and treated with a drug to which the patient may be hypersensitive, resulting in a widespread drug eruption. If the patient should happen to be highly emotional with a low tolerance for discomfort, irritation from scratching the lesions will cause their further spread and disfigurement of the clinical picture.

As a rule, and we emphasize to our students that it is simply a workable rule that is only too often broken, most patients with hand eczema have either contact dermatitis, eczematoid ringworm or nummular eczema, the distinguishing features of which are listed in the following table:

ECZEMATOUS ERUPTIONS OF THE HANDS

	Contact Dermatitis	Eczematoid Ringworm	Nummular Eczema
Location	Dorsal	Palmar	Dorsal
Distribution	Bilateral (one hand worse)	Bilateral Symmetrical	Unilateral If bilateral, not symmetrical
Primary lesion	Papular or Vesicular	Vesicular	Papule Vesicle Pustule
Scale	Central	Overhanging	Peripheral
Margins	Poor	Usually Sharp	Sharp
Depth	1 plus	4 plus	2 plus
Itching	4 plus	1 plus	1 plus
Other	History, Occupation, etc.	Focus in foot or groin	Seasonal recurrences

Contact dermatitis usually affects the dorsal surfaces of the hands where the skin is relatively thin and rendered more vulnerable to irritants by the presence

on the dorsum of follicular orifices. In workmen the eruption generally involves also the thin flexor surface of the wrists. The morphologic changes are those of simple inflammation with its accompanying heat, redness, swelling and itching. The lesions are erythematous, papular or vesicular depending upon the potency of the irritating substance and the degree to which the skin reacts to that irritant. From repeated irritation or secondary infection the lesions may in time become thickened, indurated, pustular, crusted or moist. Usually the entire surface of the hand is affected though, sometimes, particularly at the beginning of an attack, there are discrete but poorly outlined patches. There is no definite course or duration for the disease, for both are dependent upon the cause. If the irritant eludes identification the dermatitis may persist for weeks, months or even years with remissions and exacerbations. In some cases even when the irritant is identified and avoided, as in chrome dermatitis in persons engaged in servicing Diesel engines, the dermatitis may for some unexplained reason persist for many months despite all rational treatment. Then too, in some cases the dermatitis persists because of what is referred to as spreading of the allergic base in which it is assumed that because of hypersensitivity to one product a person becomes hypersensitive to other products. Spreading of the allergic base is a loosely-used concept that is the subject of considerable debate in dermatology. While it lacks experimental proof, it is likely that such a spread may occur, though in any given case one must be certain that the patient is not using a product that is immunochemically related to the original irritant.

Eczematoid ringworm attacks the palms rather than the dorsal surfaces. The lesions may be vesicular, scaly or hyperkeratotic, just as on the soles, and most often both palms are involved symmetrically.

Usually fungi cannot be recovered from lesions on the palms; such cases, accordingly, are not contagious. Patients with ringworm of the hands ordinarily have a focus of ringworm in the toes. They exhibit a positive reaction to a cutaneous test with fungal material. A certain percentage of persons with ringworm of the feet, even if the feet are bandaged to prevent contact with the hands, will in time present lesions on the palms. For these reasons it is thought that eczematoid ringworm of the hands is an allergic "id" type of reaction to a focus of ringworm in the feet rather than an infection due to autoinoculation. Occasionally, however, fungi are recovered from lesions on the palms. Such cases, of course, are examples of direct inoculation infection rather than of dermatophytids.

Lesions of the hands due to ***dysidrosis*** identical clinically to the vesicular variety of ringworm are encountered quite frequently. The lesions of dysidrosis occur in the form of deepseated, discrete vesicles on the sides of the fingers and on the palms, in persons with moist palms. They may occur as a result of reaction either to drugs, infections, foods, psychic disturbances, contact with

irritants, or too often they occur without obvious cause, in which case they are difficult to distinguish from the "id" type of ringworm.

The third condition, nummular eczema, is a peculiarly troublesome type of eczema-dermatitis that occurs all too frequently, especially during cold weather. It appears most often on the dorsal surface of one hand in the form one or two coin-sized, rounded, red, well defined, indolent, papulo-scaly or papulovesicular patches. Sometimes instead of a single patch on one hand, both hands may be involved, or the forearms, ankles, legs, etc. and with numerous lesions instead of but one or two. Itching is not an important symptom, the patients are more concerned with the objectionable appearance of the hands. The condition responds rather well to treatment but the lesions have a tendency to recur. Typical uncomplicated cases are easily recognized, but too often extraneous factors such as overtreatment and infection alter the clinical picture to such an extent as to make classification impossible. It is even more difficult to establish the causative factor, for identical pictures have been attributed to such varied etiologic factors as primary irritants, allergenic substances, "id" type reactions, foci of infection, inhalants, drugs, and even emotional factors and foods.

The three conditions must be distinguished from the following diseases which occasionally become eczematous when the hands are involved.

Scabies attacks usually the webs of the fingers and the flexor surfaces of the wrists. Small vesico-papules or tiny dark burrows are present in these area and on the genitalia. Frequently others in the family are also infected, and they all complain of itching when the body is warm, as in bed. When all the symptoms are present scabies is easily recognized, but in clean persons it may be so difficult to recognize that the diagnosis is ventured on hunch because of the presence of but one of the symptoms. Scabies is much less common that it was formerly, probably because of the newer simplified treatment with quickly effective scabicidal preparations such as benzyl benzoate and proprietary preparations such as Eurax and Quell.

Erythema multiforme also has a predilection for the dorsal surfaces of the hands. The pathognomonic lesions consist of a ring within a ring described as iris, bull's eye or fish-eye lesions. The involvement is bilateral and roughly symmetrical; usually the lips are also affected. The lesions on the hands ordinarily cause but little itching. Erythema multiforme is a symptom-complex due usually to a drug or to an infection.

Psoriasis, except for a relatively rare pustular variety, is seldom limited to the hands. It occurs on either the dorsum or palms and, though the lesions are apt to be modified by trauma, usually one can observe a lesion that is characteristic, red—redder than a patch of eczema—sharply defined, slightly indurated and covered with a dry silvery scale. Most often the diagnosis is obvious because of the presence of psoriatic lesions on other areas of predilection such as the extensors

of the elbows and knees, the sacral area, the scalp and the nails. The hope that cortisone and ACTH would prove to be the panacea was quickly dissipated. More often the steroids fail rather than help to effect involution of the lesions, and their use, because of inherent dangers, should be confined to cases in which there is an associated incapacitating arthritis or to psoriatic cripples, those with so much psoriasis that they cannot work. Psoriasis of the trunk must be differentiated from both pityriasis rosea and lichen planus.

Pityriasis rosea, which is rather common during the changing seasons of the year, exhibits elongated, oval-shaped lesions with the long axis of the oval following the lines of cleavage. On the back the arrangement of the lesions has an outline like that of a Christmas tree. The disease runs its course in about six to ten weeks. During the first three weeks the eruption gets steadily worse and then begins to improve and fade out. Ordinarily a patient will suffer but one attack. Seldom does it cause bothersome itching.

Lichen planus is becoming a rather common disease. It is one of the few dermatologic entities in which there is a definite link with the emotions. Note the characteristic purplish, flattopped, shiny papules, on the flexor surfaces of the wrist. The disease occurs also in the mouth and on the genitals. The lesions itch intensely. Lichen planus is considered to be an infection but a causative organism has never been established. The treatment, despite the strong psychic element, is with heavy metals, particularly with bismuth. Yet, paradoxically, in some persons bismuth will produce lichen planus. Recently there have been reports of good results from the use of antibiotics and from ACTH and cortisone.

Alopecia areata, another disease influenced by the emotions, also is not uncommon. The prognosis of the condition is usually good unless the onset occurs before puberty. Such cases sometimes progress into alopecia totalis which usually has a hopeless prognosis. The treatment of alopecia areata is with stimulation either by massage, by chemicals or by ultra-violet irradiation.

Lichen planus and alopecia areata are mentioned not only because they are relatively common diseases. Psychogenic factors, especially those of stress, are seemingly important in their etiology. Those concerned with the railroad industry might well be faced with the necessity to decide whether a worker directly responsible for the safety of the public should be replaced simply because he has one of these so-called minor skin disease.

The various pyoderms and tineal infections, not discussed for lack of time, are sometimes of importance in industry either because of their contagious nature or because they are complicated by irritating factors in work.

THE FACE

The face, next to the hands and forearms, is affected more by occupational irritants than is any other part of the body. Contact dermatitis affects the eyelids particularly—these become red, scaly and swollen.

The eczematous inflammatory changes may involve the entire face up to the hat line (in a man who wears a cap at work) and down to cover the "V" portion of the neck—in short the exposed surfaces. The irritants may be either chemicals, plants and their products such as resins or lacquer, vital agents as fungi or bacteria, or mechanical or physical agents such as heat, cold, friction or light rays. Such irritants may of course be encountered away from work, too, and an accurate and painstaking history and sometimes study by patch tests are necessary in every such case. If the dermatitis should not improve on week-ends or on vacation from work, it would suggest that the irritant is encountered at home, perhaps in painting, in carpentry, or in a hobby.

On occasion contact dermatitis of the face must be distinguished from ordinarily non-occupational diseases as acne rosacea, seborrhoeic eczema, and even from lupus erythematosus.

The presence, in a middle aged person, of papulo-pustules and telangiectases in the central oval portion of the face characterizes *acne rosacea*. A yellowish tinged unctuous scaly and inflammatory dermatitis involving the scalp and adjacent forehead, the eyelids, nasolabial folds and retroauricular areas characterizes *seborrhoeic dermatitis*. The presence of sharply defined patches that the red scaly, telangiecatic and atrophic should suggest *lupus erythematosus*.

The treatment of occupational eruptions is, of course, dependent upon an accurate diagnosis. Rational measures would dictate that first the worker be removed from his job and, in some cases, even from his home. The choice of topical measures will then depend upon the acuteness of the eruption. As a general rule, acute vesicular eruptions are treated with cool wet dressings of boric acid solution or dilute aluminum subacetate; papular eruptions are treated with soothing ointments or creams, and erythematous eruptions are treated with either creams or powdery suspensions of the type of the familiar calamine lotion. Sometimes, unfortunately, as in chrome dermatitis such rational measures fail to produce quick results. Treatment then presents difficulties even as does the diagnosis of some cases. It is for these reasons as well as for their economic importance occupational dermatoses constitute one of the most challenging and interesting subjects in dermatology.

—Herbert Rattner, Industrial Medicine and Surgery, Vol. 22, No. 5, May 1953, Pp. 198.

Survey of Tar Therapy in Dermatology

Tar, sulfur and salicylic acid have long been used in dermatological practice, singly or in combination, and their efficacy has been demonstrated in a number of skin diseases. Yet certain factors with respect to the conjunctive therapeutic effects of tar requiring re-evaluation, had stimulated this study.

Sulfar and Salicylic Acid—Sulfur, usually as precipitated sulfur, is used as a parasiticide for such conditions as dermatophytosis and scabies, and as a mild antiseptic and irritant in seborrheic dermatitis, acne vulgaris, and rosacea. Sulfur is a keratolytic as well as a keratoplastic agent. The keratolytic effect may be caused by the superficial action of sulfur (by forming hydrogen sulfide) on the stratum corneum, while a deeper action of the sulfur on the strutum germinativum may be the cause of keratoplastic changes.

Salicylic Acid, in low concentration (1 to 2 per cent), is a keratoplastic and in greater strength (5 to 20%), a keratolytic agent. It enhances the action of sulfur, tar and other medicinal agents used in dermatologic conditions, by softening the stratum corneum to permit penetration of the accompanying agent, as for example, in seborrheic dermatitis and dermatomycosis. Sutton and Sutton comment that " the addition of three per cent salicylic acid makes a five per cent sulfur ointment effectual in tinea, such as might not respond to fifteen per cent sulfur alone. "

Tar—The chief value of crude coal tar seems to be in (a) its keratoplastic action which often restores normal keratinization and (b) its photosensitizing action or additive effect in connection with ultra-violet light in the treatment of psoriasis and acne vulgaris.

Since the composition of crude coal tar depends on many factors, i.e. type of coal, coke, petroleum, shale, lignite, or other substances used as sources, as well as on the particular methods used in its manufacture, we agree with Combes that the possibilities for variations in the chemical and physical properties of crude coal tar are at least as numerous as the number of preparations available which contain tar. We further agree with respect to the objectionable features of crude coal tar: (1) odor; (2) color; (3) immiscibility with water; (4) difficulty in removal from skin, clothing, or linens; (5) occasional unfavorable reaction in hairy areas; (6) great difficulty encountered by pharmacists in compounding a uniform and satisfactory, smooth, homogeneous ointment in which no grit or particles of pitch are evident.

There are also other differences of opinion with respect to tars. One group believes that the whole crude coal tar should be used mainly because tar is a rather undefined material, deducing thereby, that by using the whole crude product, one would be assured of not losing some valuable, though undefined fraction.

Another group prepared and utilized a so-called synthetic tar, the proportions of its ingredients being calculated from an analysis of a tar sample, but duplicability of sample and results posed another problem.

A third group avoids the use of whole crude coal tar, as well as the so-called synthetic tar, but instead, uses an extract or concentrate of tar. It takes the position that whole crude coal tar contains many ingredients which are probably

useless, among these being some primary irritants. This group also fears that whole crude coal tar may contain carcinogenic compounds, such as 20-methyl-cholanthrene. For esthetic reasons it also prefers the tar extract or concentrate, which does not have the disagreeable odor, color and texture of crude coal tar.

In this study we have used an ointment containing a concentrate of crude coal tar equal to 5% crude coal tar, combined with 4% of sulfer and 3% of salicylic acid. The raw material used in making the tar concentrate is a whole, crude coal tar obtained as a by-product from the manufacture of illuminating gas from coal (not petroleum). It is obtained from one source only, and it is not "stripped" tar. The whole crude coal tar is subjected to certain processes which essentially separate it into two parts: (1) the heavy, asphaltic (bituminous) or pitch-like fraction which is discarded, and (2) a light fraction which contains the rest of the whole crude coal tar, including the volatile materials which are used. This concentrate contains, among other fractions known to be useful, such ingredients as some tar acids, phenols, cresols, and similar substances.

The ointment base into which this tar concentrate and other active materials are incorporated, consists of a mixture of alcohols, glycols, and hydrocarbons, with small amounts of complex organic blending agents; none of these materials contain nitrogen or cholesterol. The resulting product is a smooth, creamy, cream colored, non-staining and non-greasy, "hydrophilic" type of ointment.

Clinical Material—The dermatologic cases under investigation were taken at random, and included those conditions commonly and normally seen in a dermatology clinic. We avoided "choosing" our cases, for fear of a non-representative, hence fallacious conclusion. Totally, there were one hundred and seventy patients treated, of whom twenty failed to return for follow-up. In the remaining group of one hundred and fifty patients, there were comprised eigtheen separate dermatological conditions. In all of these varied dermatoses, the ointment was applied morning and night to the affected areas, without rubbing or massaging. No special preparation of the affected skin was necessary prior to the application and soap was interdicted only in those instances where it was considered to act as an irritant. Topical use of this preparation in hairy areas was identical to the method of application on glabrous skin. In the treatment of acne and psoriasis, ultra-violet radiation in erythema dosages was given once weekly in addition to the use of this product. The results of this study follow.

Results—As was to be expected, the best results were obtained in the dry, scaling, chronic dermatoses, such as seborrheic dermatitis, trichophytosis, and psoriasis, whereas the acute inflammatory or weeping eczematous-type of eruption responded least favorably to treatment. It is of interest however, to note that in several cases of vesicular, crusted, erythematous and weeping dermatoses, there was an initial temporary period of improvement, lasting no longer than one week before exacerbation took place.

Some degree of improvement (mild to marked) was obtained in 88% of those psoriatics treated. As stated previously, in addition to application of the ointment, all of the psoriatic cases received ultraviolet light therapy, and it is our feeling that the high percentage of improvement was due to the photosensitizing or additive effect of the tar plus the keratolytic effect of the salicylic acid.

Similarly, the sixteen cases of acne vulgaris received ultra-violet radiation, and in our opinion were benefited because of the sulfur and photosensitization or additive effect of the tar. Kurtin and Yontef have reported excellent results after using the photosensitization treatment of acne vulgaris in some five hundred patients.

In the treatment of conditions due to fungus infections such as dermatomycosis of the feet, hands, and crural regions, as well as tinea versicolor, the response was most favorable, with one exception. All of the cases were proven with mycological studies, and the only failure was a case of trichophytosis purpureum of the hand, which had resisted all previous fungicidal therapy.

Four out of five cases of dyshidrosis of the hands and feet, and five cases of atopic eczema or neurodermatitis were benefited, probably by virtue of the keratoplastic effect of the tar.

Eczema fissum, fissured dermatoses, and chronic dermatitis, manifested by infiltration, scaling and lichenification, responded satisfactorily to this medication.

A very low index of sensitization or contact-type of reaction was observed from the use of this product. In only five cases did such a reaction occur, and in all instances, the patients were found to be sensitive to sulfur by patch testing, not to the tar concentrate. No sensitization was found from the ointment base, which was tested on many subjects. No instances of pustulation or folliculitis were noted, although the preparation was used in hairy areas.

—Oliver J. Harris, Francis M. Thurmon, John M. Kranichuck, From Medical Times, Vol. 81, No. 5, May 1953, Pp. 346.

Hydrocorisone Acetate Ointment

Effected satisfactory improvement in 20 of 30 cases of atopic dermatitis and 14 of 28 cases of other skin aflictions such as contact dermatitis and eczema. Improvement was usually apparent within 24 to 48 hours and was maintained, for the most part, so long as the cintment was used. No adverse systemic or allergic effects were observed. The ointment also is cosmetically and aesthetically acceptable.—*M. B. Sulzberger, V. H. Witten, and C. C. Smith, J. A. M. A. 151:468, Feb. 7, 1953.*

Alopecia Prematura

And scaling of 3 to 100 months' duration in 3 men and 3 women responded promptly to treatment with a topically applied estrogen lotion after other measures had failed.—*I. Shapiro, J. M. Soc. New Jersey 50:17, Jan. 1953.*

The Effects of Hypoproteinemia

As related to certain dermatoses are emphasized, with the recommendation that the plasma total proteins, albumin and globulin fractions be investigated in exfoliative dermatitis due to drugs such as penicillin and arsenicals and in generalized pruritus and neurodermatitis. When the plasma albumin fraction is below normal, high protein diet and amino acid powders should be included in the treatment.

—D. B. Morgan, J. Missouri State M. A. 49:896, Nov. 1952

Surgical Treatment of Eczema

The affected part is scraped under local anaesthesia. Cautious but thorough removal of the outer layers of the skin with a good margin into the surrounding healthy area results in exposure of cutis vera on the bed of the eczematous patch. Antiseptic dressings are applied to the raw surface which heal up by granulation in about 3 weeks' time.

(H. Chandra, Punjab Medical Journal, July 1953, Pp 471—479)

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INTERNATIONAL PROGRESS IN COMBATING V. D. & DERMATOLOGY

VD in Palestine

When Palestine was part of the Ottoman empire prior to World War I and in the year following under the British Mandate, the venereal diseases were not subject to compulsory notification. As a consequence there is no accurate way of estimating the extent of the problem. A recent report of the Israeli Ministry of Health states that the "venereal disease problem scarcely existed among the Jews in Palestine" prior to 1948. This view would be seriously contested by American and British venereal disease control officers in the light of the number of contacts reported by Allied troops stationed or on rest or convalescent leave in Palestine during World War II.

Despite this difference of opinion there is no gainsaying the fact reported by the Israeli Ministry of Health that "with the start of mass immigration from Eastern countries where treponematoses are even epidemic, the position has changed."

The only statistics available on the subject before 1948 are those furnished by the Workers' Sick Fund of the Histadrut (Kupat Holim). This voluntary health insurance fund, which furnishes comprehensive medical care to over 600,000 workers and their families in Israel today, reports that from 1937 to 1945 the venereal disease incidence rate per 100,000 of the insured population varied between 0.12 and 0.33 for syphilis and 0.36 and 0.64 for gonorrhea.

Incidence of venereal disease in Israel

Since the establishment of the new state in 1948, statistics on the current picture are beginning to be available. Beginning in April, 1949, all new immigrants 15 to 50 years old passing the clearance camp of ***Shaar Ha Aliyah*** in Haifa, the main port of entry into Israel, have had routine serologic tests for syphilis and clinical examinations by dermatologists of the government health service.

Screening examinations in the Shaar Ha Aliyah Camp

	1949	*1950*
Number of persons tasted	68,800	80,000
Perecentage of cases of syphilis detected by blood tests and clinically confirmed	0.79	0.68

In December of 1950 the reporting of venereal diseases became compulsory. In view of the mobility of the new immigrants and the fact that both the general population as well as segments of the medical profession had to be educated to the importance of notification, the incidence reports for 1951 and 1952 cannot be regarded as reliable. The Ministry of Health reports that "the total number of

cases of syphilis can only be estimated approximately as being about 14,000 in 1952, that is, about one per 1,000 of the population."

Approximate distribution of the different stages of syphilis in 1951

	Percent
Early syphilis (stages 1 and 2)	2.5
Late and latent syphilis	85.0
Congenital syphilis	1.0
Stage not known	11.5

Not indicated in the table is the fact that bejel, a non-venereal type of syphilis, endemic and in fact epidemic throughout the Middle East, is of growing importance in Israel, especially within the last year with the arrival of tens of thousands of new immigrants from Iraq and Iran.

In a recent report Dr. Czerniak, VD control chief for the Ministry of Health, summarized incidence data on syphilis and deaths from syphilis for the calendar years 1950 and 1951 and for the first nine months of 1952.

Notified cases of syphilis and deaths from syphilis from 1950 to 1952.

Year	*Cases*	*Deaths*
1950 (I-XII)	1,024	12
1951 (I-XII)	1,238	5
1952 (I-IX)	706	11

Stage of notified cases of syphilis from 1949 to 1952

Early syphilis (stages I and II)	150
Latent and late syphilis	2,144
Neurosyphilis	812
Lues congenita	91
Treponematosis endemica (bejel)	25
	3,222

Sources of infection in notified cases of syphilis

Source of infection	*1949*	*1950*	*1951*	*1952*	*Total*
In Israel	—	1	11	28	40
Abroad	201	826	1,123	323	2,473
Unknown	53	197	104	355	509
Total of notified cases	254	1,024	1,238	706	3,222

To cope with this situation a number of programs have been established.

VD control programs

Shortly after the Ministry of Health was created it set up a venereal disease control section. When compulsory reporting of these diseases was enacted in December of 1950, a confidential central card index system was establishedd in the ministry.

One of the early orders of business of the new Ministry of Health was the consideration of a National Venereal Disease Control Act...it has yet to become law.

Treatment is provided free of charge in 19 government municipal and *Kupat Holim* skin clinics and in the skin departments of hospitals. Drugs for the treatment of VD are distributed free of charge to public clinics and private doctors. In addition, procaine penicillin is distributed free to *Kupat Holim* for the treatment of its members.

Prevention

In two areas only is the government's venereal disease program oriented toward prevention. The first of these is an extension of the work carried on for many years by the maternal and child clinics of Hadassah and the *Kupat Holim*. In these clinics, many of them still run by organizations independent of the Ministry of Health, the antenatal program routinely calls for serologic tests. The government, moreover, has standardized serological methods in all of the 28 laboratories (5 government, 2 Hadassah, 10 *Kupat Holim* and 11 private) rendering such service.

Quantitatively the effectiveness of the VD control program in the antenatal clinics has been questioned. In 1950, for example, only 16525 expectant mothers registered with these clinics...in that year there were 36,004 live births.

The second preventive aspect of the venereal disease control program involves the new immigrants. A primary concern, to be sure, has been to treat and render noninfectious the new cases of venereal disease. But to do that it has been essential to discover precisely who is infected. Thus, the screening and diagnosis of new immigrants has become a necessary and salutary first step.

The most conspicuous lack in the preventive aspect of the VD control program is health education. Although there is pressing need for this under the unique conditions in Israel today, neither funds nor personnel are available.

Venereal diseases and new immigrants

In recent years the immigrants have posed a special problem on several scores. In the first place, as a consequence of illiteracy and language difficulties there has been an unwillingness on the part of some to commence treatment. In the second place, among those who have been treated and rendered noncontagious —now the practice for all immigrants coming into clearance camps—it is difficult to maintain contact and adequate follow-up. These difficulties could be overcome partly by the use of penicillin aluminum monostearate and newer antibiotics, but in the light of the present austerity in Israel it is not possible to obtain in quantity these relatively expensive agents.

The present policy of the government, however, is to render non-infectious as many cases as possible and to follow up long-term treatment as best as it can.

Trained social workers trace contacts through the district health office... and the social workers, rather than physicians, follow up. The cases diagnosed at the clearance camp are reported to the health offices of the district in which the immigrant will be settled. Despite the fact that the immigrants may be "settled" they are often extremely mobile within as well outside the district, so that continuity of treatment is also difficult. With limited government clinics available in some of these remote districts, the Ministry of Health has made an effort to offset this difficulty by arranging with the ***Kupat Holim***, which has set up clinics in many of these new settlements, to treat VD even in the non-insured.

The recent revision in the immigration policy has had a salutary effect on the VD problem in that the government renewed an earlier regulation requiring every candidate for immigration from abroad to be medically examined (including examinations for venereal disease) prior to his departure for Israel. Visas are not now being granted to persons actively infected with the venereal diseases.

Although not directly an effect of this revised immigration policy, there has been in recent months a more rigid approach to venereal disease control, particularly in applying screening tests, which are now standardized and regularly made of all immigrants at the reception camps, all army recruits and all admissions to hospitals throughout the country.

Venereal diseases and the Arab population

There are about 100,000 Arabs in Israel today, most of them Moslem and most of them, despite continuous contact with their Israeli neighbors, leading culturally independent lives.

Those Arabs who are members of the General Worker's Union enjoy all of the services of the ***Kupat Holim***. In addition, Hadassah hospitals and clinics have traditionally and continuously made their services available to the Arabs.

Within the last few years the Ministry of Health has opened in areas inhabited mainly by Arabs four mobile clinics for the Bedouin tribes in the Negev and for certain villages in western Galilee, and 23 permanent clinics, each staffed by a physician and a nurse who render free medical care and dispense drugs and pharmaceuticals without charge. The government has enunciated a general policy, moreover, imposing no restriction whatsoever on the admisson of patients to its hospitals.

Thus Israeli's venereal disease activities, both preventive and therapeutic, are available in equal measure to Arab and Jew alike.

Summary

Despite the fact that the venereal diseases are endemic in the Middle East, such statistics as are available for the period before 1948 indicate a relatively low incidence among the Palestinian population. With the creation of the new state in 1948 and the unparalleled immigration into the country there is believed to be

a significant increase in these diseases. Epidemiologic data are still inadequate in evaluating the seriousness of these diseases in the whole Israeli public health picture.

The full medical resources of the country have been mobilized to cope with the VD problem:

* By law, the venereal diseases are reportable.
* All immigrants are screened, and case-finding has been highly developed.
* Inadequacies exist in follow-up as well as in public information and education.
* Treatment programs by voluntary agencies supported from abroad are generally of a high order.
* Treatment programs by local agencies indigenously supported are limited in funds and personnel.
* The government program has these same limitations.

Nonetheless, the mobilization of public and private resources and their sound orientation toward both prevention and therapy indicate that the future program will develop along effective lines.

—J. Hirsh, the Jl. of Soc. Hyg., April, 1953.

The Ministry of Health Report in England for 1950

Venereal Diseases—Syphilis:

In 1950 the clinic figures for early syphilis reached a level well below that of 1949, the number of patients attending for the first time falling from 6,812 in 1949 to 4,143 in 1950. It is, however, significant that in 1950 the fall has not been so steep in some of the large seaports as in the inland cities of comparable size; and at two London dockside clinics, dealing largely with seamen, the numbers of new infections have increased considerably.

Though the home reservoirs of infectious syphilis at present stand at a record low level, it is as well to realise that they would rapidly become flooded in a national emergency and that they continue to be fed by a constant importation of infection from overseas. It is significant that a considerable increase in the numbers of African, West Indian and Asiatic patients has been noted in many of the larger urban clinics.

For the first time for many years there has been a dramatic decline in the number of first year congenital syphilitics, which fell from 355 in 1949 to 227 in 1950. Congenital syphilis is now completely preventable and it is certain that the extension of routine ante-natal blood testing would further reduce this record low figure. As well as the above, 996 patients in the later stages of congenital infection attended the clinics for the first time in 1950 as against 1,062 in 1949.

The present generation of school children was born during and immediately after the war when the prevalence of early syphilis was high.

Some increase in late syphilis is also an inevitable legacy of war, and the importance not only of routine blood testing but of the thorough investigation of all those giving positive reactions cannot be too strongly stressed. In 1950, 2,844 men and 2,757 women in the later stages of syphilis attended the clinics for the first time compared with 2,870 men and 2,600 women in 1949. Doubtless the rise in the number of women patients is largely due to the growing practice of routine ante-natal blood testing and it is noteworthy that the increase in the numbers of patients with nervous involvement has been proportionately greater in women than in men.

Gonorrhoea :

The clinic incidence of this disease has again fallen, 20,504 cases being diagnosed in 1950 as against 24,487 in 1949. The ratio of female to male cases is unchanged and there is no certain evidence to suggest that more patients are having private treatment than formerly. The results of treatment with penicillin continue to be excellent and it is possible that its great popularity in the treatment of other conditions may be playing some part in reducing the numbers of asymptomatic female carriers of the gonococcus.

Other Venereal Diseases :

Four hundred and fifty cases of chancroid and 65 of lymphogranuloma venereum were diagnosed as against 562 and 59 in 1949. The patients were nearly all men and as usual these diseases were diagnosed mainly at the seaports.

Other conditions dealt with at the clinics :

The number of patients who were found only to need reassurance has risen from 44,674 in 1949 to 45,674 (including 13,859 women) in 1950. This rise suggests that the clinics have lost none of their popularity and that the public awareness of the dangers of venereal disease remains undiminished.

Social work :

The indoor and outdoor social work of the clinics continues to be shared between the hospital almoners and the staffs of medical officers of health. The default rate from what may be termed the " sterilising " treatment of early syphilis is fairly satisfactory, and in 1950 all but 176 men and 73 women out of 2,678 men and 1,465 women completed at least one course of penicillin or of arsenic and bismuth. In gonorrhoea, which is normally treated with a single injection of penicillin, default from post-treatment observation is very common, but so long as the prevalence of infectious syphilis remains low the danger of this disease being masked by penicillin is probably minimal.

Though the total number of new patients has fallen, the number of contacts attending for examination through the agency of social service workers has risen

from 2,465 in 1949 to 2,704 in 1950, but of those attending through the agency of patients (the more usual method of "case finding") has fallen slightly from 7,709 to 7,643.

The present position and the future :

Penicillin is now the sheet anchor in the treatment of both syphilis and gonorrhoea and there is already a noticeable tendency to abandon the arsenical drugs, especially in early infectious syphilis. There is still no evidence of the spirochoete or the gonococcus developing strain resistance to penicillin and the results of the post-war treatment of both diseases show no signs of worsening with the lapse of time.

Vigilance at the ports, energetic contact tracing and an extension of routine blood testing summarise what is epidemiologically necessary if the present low prevalence of venereal infection is to be still improved or even maintained. The easy efficacy of modern treatment is becoming common knowledge. This may sometimes encourage promiscuity but the net result should be to bring more infected persons under treatment at an earlier date.

—The Shield, London, April, 1953.

V. D. Control Centre, Iran

A venereal disease control and demonstration centre, to be operated by the Government of Iran with the aid of World Health Organization, was opened in Teheran on 2 July, WHO's Regional Office in Alexandria, Egypt, has announced.

WHO will provide international personnel, equipment and supplies necessary for operation of centre and the Government of Iran will supply matching national team members, trainees and premises.

The VD centre has been established in the Nedjat Hospital and will serve as a demonstration and as a training centre for doctors, nurses, and auxiliaries including laboratory technicians; as staff are trained, the expansion of VD services throughout the country will take place.

At the request of the Iranian Government, WHO has provided a team of three experts. A Chief Medical Adviser, who is a venereal disease specialist, and a serologist, who will be the chief laboratory adviser, are already in the field. A public health nurse is expected in Teheran this month.

Three WHO fellowships have been granted to Iranians-one to a physician to specialize in the study of venereal disease control, another to a bacteriologist to specialize in serology and the third to a public health nurse to study venereal disease control.

—U. N. Weekly News letter 21-7-53

Venereal-Disease-Control Demonstration in Egypt

The end of December 1952 marked the completion of a two-year WHO supported project in venereal-disease control in Egypt, carried out by the Egyptian Health Administration and an international team composed of a senior medical adviser (team leader), a physician-serologist, a public health nurse and a programme specialist (health educator). This team acted in an advisory capacity to the Egyptian Ministry of Health and was attached to the Venereal Disease Section, under the direction of Dr. Ibrahim Hanafi Nagi.

The team undertook to assist in: (1) training medical and auxiliary personnel, (2) standardizing diagnostic and treatment procedures in venereal-disease control, (3) encouraging the use of modern public-health techniques in case finding, epidemiological studies, etc., (4) fostering co-operation between governmental and non-governmental organizations in promoting health education, (5) studying the economic and social significance of venereal disease in the country, and (6) initiating limited research on certain problems.

At the end of fifteen months, the team moved to Cairo, where it worked in close contact with the Health Administration and the University clinics.

During the period covered by the project, between 50,000 and 60,000 persons were examined-in clinics, hospitals, and leprosaria, as well as in sample surveys. More than 100,000 serological tests were performed. Three per cent. of the people examined were found to have venereal disease and were treated with penicillin.

The majority of the cases discovered were latent or late congenital syphilis. Neurosyphilis was found to be more prevalent than had been thought (more than 4% of the cases diagnosed were neurosyphilitic). This problem is therefore being studied, spinal punctures being done routinely on late and latent syphilitics in several hospitals. In some areas syphilis seemed to be a "family disease", spread among people living in overcrowded and unhygienic conditions and becoming "endemic" in nature.

The second year of the WHO project saw an emphasis on training activities.

While all the original objectives could not be attained in the allotted two-year period, the following accomplishments have been recorded.

Modern techniques in venereal-disease control were introduced and accepted, including a nationwide reorientation to treatment of syphilis with PAM (procaine penicillin G in oil with aluminium monostearate) instead of the toxic arsenicals; the use of newer antigens, such as cardiolipin, in serological tests; and the use of standard record-forms in the clinic and laboratory and in case-finding and epidemiological activities.

A teaching, training, and research centre was established and national personnel were trained.

... The introduction of mass-survey techniques and of modern methods of epidemiological investigations made possible a more accurate evaluation of the prevalence of veneral disease and of its social and economic implications.

... Health education of the public concerning venereal diseases served as an approach to the advancement of general health education and fostered co-operation among personnel in different fields (e. g., social workers, government authorities, and members of the medical profession) and among various national and international agencies.

The venereal-disease-control programme, which is still in progress, has contributed to the strengthening of public-health services and, directly and indirectly, to the improvement of social and economic conditions.

The WHO demonstration did much to stimulate venereal-disease control in Egypt.

The Work of WHO on Venereal Diseases and Treponematoses in 1952

As in previous years, mass treatment with repository penicillin preparations was the most powerful weapon in fighting venereal infections and treponematoses and served as the basis of many WHO-assisted control projects.

Aid continued to be given to yaws-control programmes in Haiti, Indonesia, Philippines, and Thailand; to the bejel-control project in Iraq; to efforts to control endemic syphilis in Bosnia, Yugoslavia; and to general venereal-disease in Afghanistan, Burma, Ceylon, Guatemala and Pakistan. Projects were initiated in Ethiopia, Laos, Paraguay, Saudi Arabia and South India. A venereal-disease-control project was completed in Egypt and a consultant finished his assignment in Israel. Foundations were laid for international courses in venereal-disease control to be given at the port demonstration and training centre at Rotterdam, the Netherlands. Consultants visited China (Taiwan), Hong Kong and Philippines to advise the governments on the improvement of venereal-disease-control services and Nigeria and Uganda to study the extent and nature of the treponemal-disease problems.

In collaboration with the Government of Thailand and UNICEF, WHO sponsored the first International Symposium on Yaws Control, which was held at Bangkok in March and which was attended by workers from more than thirty countries.

Future VD Programs to Concentrate on Late Stages

Venereal disease control in the future will become more and more a matter of finding and treating people in the latent and late stages of syphilis in order to prevent disability and premature death, in the opinion of Dr. Theodore J. Bauer, Atlanta, Ga. Dr. Bauer is medical officer in charge at the Communicable Disease Center of the U. S. Public Health Service.

Although the results of casefinding of early syphilis have resulted in a consistent decrease in the number of infectious syphilis cases being reported, there remain an estimated 2,100,000 persons with latent and late syphilis in the population who must be discovered and brought to treatment, Dr. Bauer wrote in a recent *Journal of the A. M. A.* Unless this is done, approximately 250,000 of these persons will suffer from central nervous system and cardiovascular manifestations of the disease.

Dr. Bauer pointed out that in 1936, there were about 92,000 persons with psychoses due to syphilis in mental institutions. In 1952, the number was 41,000.

A great decrease also has been noted in recent years in the number of adult deaths, infant deaths, and disabilities due to syphilis. In 1951 the adult death rate from syphilis was 4.7 per 100,000 population, as compared to 10.7 per 100,000 population in 1940.

"The reduction in infant mortality due to syphilis is even more striking", he stated. "It is estimated that the infant death rate due to syphilis was 0.06 per 1,000 live births in 1950, a decrease of about 92 per cent from the 1933 rate of of 0.79 per 1,000 live births. It is interesting to note that the infant mortality rate due to syphilis has been reduced much more markedly than the infant death rate from all causes".

The rapid decline in cases of early syphilis in the United States during the last decade is the result of intensive effort to find and treat persons with the early stages of the disease, according to Dr. Bauer, who added:

"As early syphilis gradually is brought under control in this country, one must remember that the increase in international mobilization and the ease of international travel increases the likelihood of importing syphilis from foreign countries where early syphilis is not under control."

Medical Times, Pp. 490, July, 1953.

Skin Disinfection

Various types of antiseptics are commonly applied to the skin before puncture or incision. These belong to five main classes: alcohols, halogens, mercury compounds, dyes and the surface active agents (quaternary ammonium compounds). Medical literature is replete with the praises of one antiseptic over the other. The widely varying results can only be ascribed to the fact that there is no standard method for testing these substances.

It is well-known that the entire removal of resident skin flora is neither practicable nor necessary; the primary aim of disinfection is to remove the transient flora including the pathogens. Dr. Peter Story of St. Bartholomew's Hospital (London) has devised an ingenious method for testing the skin disinfectants. He made use of a highly penicillin resistant strain of staphylococcus pyogenes. The

resistant bacteria were applied to the skin, followed by the disinfectant and the recovery of surviving bacteria from time to time. He found (*Brit. Med. J.* (1952) 2: 1129,) the following effective within 30 seconds: 1% iodine, 1% and 10% cetrimide, or 1/1000 dynium chloride in 70% Industrial spirit. In all these cases there were no surviving bacteria. Seventy per cent industrial spirit alone was also effective within 30 seconds. Aqueous solutions of cetrimide (1 to 2%) were ineffective even after 5 minutes. Other quarternary ammonium compounds were also unsatisfactory.

The Ind. J. of Pharm., Vol. XV, No. 5, 1953.

Leprosy Relief Exhibition Opened in London

An exhibition Organised by the British Empire Leprosy Relief Association (BELRA) which by means of models, dioramas, pictures and statistics tells the story of the battle that is being fought and won against leprosy has been opened in London by the Indian High Commissioner in the U. K., Mr. B. G. Kher.

Visitors to the exhibiton are told that there are in the world today 7,000,000 lepers, of whom 3,000, 000 are in the Commonwealth, including a few hundreds in Britain itself. With the aid of models, dioramas, pictures and statistics the exhibition portrays the suffering that the disease brings, the great work that is being done for sufferers now, and the new hope that has dawned for many with the discovery of sulphone drugs.

The exhibition has been largely renovated for the occasion. Among the new features is a series of six panels in depth illustrative of the model lay-out for a leprosy centre which is being adapted by BELRA workers for the governments of three overseas territories at the present time.

While opening the exhibition, Mr. Kher congratulated BELRA for organising it, and said, it was believed that there were nearly 1,000,000 people affected by the disease in India. The first known leprosy asylum was established early in the 19th century. In 1946 there were 95 institutions in different parts of the country providing accommodation for about 14,000 patients.

He also paid a tribute to Major-General Sir Leonard Rogers, Honorary medical adviser to BELRA, whose researches at Calcutta led to the formation of the Association and the former Indian Council of BELRA.

"Sir Leonard", added Mr. Kher, "is also the father of the Indian Leprosy Relief Association, which is continuing its good work under the title 'Hind Kusht Nivaran Sangh'. The Association was established in 1925 with funds raised by an appeal by Lord Reading, then Viceroy of India."

Concluding his speech, Mr. Kher appealed for generous contributions from "all persons who are more fortunately situated". "By giving our contribution", he said, "we will be paying our humble tribute to, and assisting in a large measure, the self-imposed and selfless task of the workers in the field of the British Empire Leprosy Relief Association."

26-8-53, B. I. S. New Delhi

V. D. Control in Afghanistan

The incidence of VD, as estimated from short surveys, is 10 percent of the population in Kabul; 10 percent in Herat; 4 percent in Hazarajat; and about 2 percent in Pul-i-khumari. Plans for expansion of the activities were made final in 1951. Various types of up-to-date serologic tests were tried out and the serologist found that the VDRL test was the more reliable, simple, and suitable. The Kolmer test was also found practicable and it was thought that this test should also be taught to Afghan technicians.

By the end of 1951, a full scale WHO/UNICEF team was in the field, with a serologic laboratory developed at the central public health laboratory, where diagnostic facilities could be made available to institutions in Kabul and to medical practitioners. The WHO serologist had been replaced by a clinical pathologist. The midwifery school, with an enrollment of 13 students, had started functioning during December. A first class VD service in Kabul, and an arrangement for training and teaching in anti-VD work as well as serology, had been started since the arrival of the WHO venereologist.

In 1952, the laboratory work was expanded and well established, owing to the government having made available the requisite extra space, personnel, and an animal house, in addition to equipment, furniture, and fittings. A training course in laboratory procedures was initiated in January 1952, in which four assistant doctors enrolled for a six months' course together with 10 student technicians for a two year course.

In January 1952, an international venereologist and a public health nurse were added to the team. A new VD clinic, including national staff and with equipment and supplies provided by the government, was opened in March 1952. By the end of 1952, a model clinic and a laboratory were operating where trainees from outside of Kabul receive their training. Provision was made for two international fellowships, each of 12 months' duration; one for laboratory training and the other for training in dermatology and venereology.

For 1953, provision was made for the continuance of the 1952 international personnel, while it is expected that the government will undertake the expansion of the VD control work in two provincial centres, Kandahar and Herat, with national staff trained at Kabul and equipment and supplies provided. Provision exists for one international fellowship for MPH, majoring in VD.

By the end of 1953 it is expected that:

1. The activities of the clinic and the laboratory will be placed on a firmer footing and further expanded.
2. Teaching activities will be expanded to meet the requirements of the different categories of medical and paramedical personnel.

3. The national pathologist trained abroad will return and serve as understudy to the international pathologist.

For 1954, it is proposed to continue the international staff as in 1953, with supplementary supplies. It is planned to hand over the direction of the project to the national staff by the middle of the year, with the international staff continuing thereafter in an advisory capacity.

It is expected that government will expand VD control work to another two provincial centres.

By the end of 1954 it is anticipated that:

1. The clinic and the laboratory facilities will be well-established.
2. Training programmes will be well-organized.
3. National counterparts will be adequately trained and will take over the responsibilities the work organized by the international team.
4. An adequate number of nationals will be trained to admit expansion of work outside of Kabul.
5. Four provincial centres will be established.
6. The VD problem in different parts of the country will be defined, a good VD service made available to the people in Kabul, and similar services initiated in other parts of the country.

In respect of this programme, the government has provided all personnel, materials, supplies, equipment, and services necessary for the project, and also provided adequate premises, transportation, and lodging, for the international personnel.

J. A. M. W. A., P. 226, 7., 1953.

FROM OUR BOOK SHELF

DERMATOLOGY: Essentials and Treatment; By Marion B. Sulberger and Jack Wolf; 4th Edition. Published by: Year Book Publishers, Inc., 200 E Illinois St., Chicago 11; Pp. 592; Price: $ 10.00

Not only the fourth edition of the text has a new title, but is also packed with a mine of useful and up to date information regarding dermatology. It contains several novel features, chief among them are (1) the use of ACTH and cortisone in dermatological disorders, (2) atabrine therapy for lupus erythematosus and (3) Modern concepts of syphilis in all the various forms along with the phases of treatment. There is also a brief chapter on the technics of tests useful for dermatological diagnosis.

The usefullness of the book is further enhanced by the inclusion of a number illustrations and coloured plates.

Though the book cannot be recommended as a standard text on dermatology' it can be usefully employed by general practitioners and internists for the thorough understanding of the subject.

PRACTICAL DERMATOLOGY for Medical Students and General Practitioners: By George M. Lewis; Published by: W. B. Savnders & Co., Publishers, 7, Grape Street, New Oxford Street, London, W. C. 2; Pp. X + 328. Price - $ 7.50.

This is a comprehensive treatise on the subject which is extremely useful for general practitioners and students in augmenting their knowledge on dermatology usually imparted insufficiently in their academic career.

The book contains twenty five chapters, including an exhaustive Dermatologic formulary and an up-to-date bibliography. Besides it is profusely illustrated with the author's own photographs.

The paper, printing and binding are excellent and the get up is much attractive.

FIRST INTERNATIONAL SYMPOSIUM ON YAWS CONTROL: Monograph Series, No. 15, iv + 418 pages, 32 plates; price: 22/6, $ 4.50. Published by: WHO, Palais des Nations, Geneva, Switzerland.

Eighteen of the papers, together with summaries of some of the discussions at the First International Symposium on Yaws Control, held at Bangkok, Thailand, in March 1952, have been published in the *World Health Organization: Monograph Series.* Among the subjects of the articles and discussions included in this monograph are the biology of yaws, antibiotics in the treatment of this disease, the role of international organizations in assisting governments in their efforts to control yaws, and the five phases of a yaws-control project: (1) preliminary analysis of the extent and nature of the problem, (2) development of plans of operation suitable to local conditions, (3) demonstration, survey, and training, (4) expansion of the project into a mass-treatment campaign, and (5) consolidation, in which the yaws-control programme is integrated into the permanent health structure of the area concerned. These various phases of control projects are illustrated by experiences in specific countries or regions-Africa, Brazil, Haiti, Philippines and South-East Asia (Indonesia, Thialand) and successful control campaigns, based on mass treatment with repository penicillin preparations, are described.

Indian Journal of Venereal Diseases and Dermatology

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